

Shudab Mukherjee Collection

PROCEEDINGS

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OF THE

ASIATIC SOCIETY OF BENGAL,

EDITED BY

THE HONORARY SECRETARIES.



JANUARY TO DECEMBER,

1 8 6 9.



CALCUTTA:

PRINTED BY C. B. LEWIS, BAPTIST MISSION PRESS.

1869.

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APPENDIX A.

List of papers submitted to the Society during the year 1869, with dates when they were received, and how they were disposed of.

[* Short communications and abstracts of papers, chiefly printed in full in the Proceedings, are not included in this list, but referred to in the general Index.]

Authors.	Titles of papers.	When received.	How disposed.
Ardall, J., Esq. ...	... A covenant of 'Ali f. mth, Khalif of Basrahd granting certain immunities and privileges to the Ammanian nation, ...	23rd Sept., 1869.	To be printed in Journal, Pt. I.
Ball, V., Esq., B. A. ...	... Notes on a trip to the Nicobar and Andaman Islands, Part I. The Nicobar Is., ...	8th Oct., 1869	Under consideration.
Ditto, ditto, ...	... On the ancient Copper Miners of Soughlum, 2nd June, 1869	2nd June, 1869	Printed in Proceedings for June, 1869.
Bayley, F. C., F. Q., C. S. ...	... Notes on an Arian inscript n. ...	... April, 1869.	To be printed in Journal, Pt. I, for 1870. .
Beaumes, J., Esq., C. S. ...	... The Nineteenth Book of the 'Gistes of Puthraij, by Chandal Basu. ... and the marriage with Pachnawath, literally translated from the old Hindi, ...	... July, 1869.	Printed in Journal, Pt. I No. 3, 1869.
Blastford, W. T., Esq. ...	... Contribution to Indian Malacology, No. X. 13th Feb., 1869	Ditto ditto Pt. II, No. 2, 1869.	
Ditto ditto, ...	... Ornithological notes, chiefly on some birds of Central, Western and Southern India, 3rd March, 1869.	Ditto ditto Pt. II, No. 3,	[1869.]

Ditto ditto,	H. Bieckmann, H. Eq., M. A.	Contribution to Indian Malacology, No. XI. [25th June, 1869.] To be printed in Journal, Pt. II, No. 1, for 1870.
Ditto ditto,	H. Bieckmann, H. Eq., M. A.	Notes on the Arabic and Persian Editions of the Bibliotheca Indica.—No. I, Bādāmī and the Religious Views of Emperor Akbar.
Ditto ditto,	...	... 1st April, 1869. Printed in Journal, Pt. I, No. 3, 1869.
Ditto ditto,	...	... Note on the fall of a meteorite at Jullundur, in April, A. D. 1621. Ditto in Proceedings, for June, 1869.
Ditto ditto,	...	... Contribution to the Chronology of the reigns of Timur and his descendants up to Shāhyālā, No. 1, ... 2nd June, 1869. Ditto ditto, for Augt., 1869.
Garleyfe, A. C. L., Esq.	...	... Description of two new species belonging to the Genera <i>Varanus</i> and <i>Feranoides</i> , respectively, from near Agra, ... 22nd Feb., 1869. Ditto in Journal, Pt. II, No. 3, 1869.
Ditto ditto,	...	... Notes, Numismatical, Palaeographical and Archaeological, relating to India, ... March, 1869. Abstract (only), printed in Proceeding, July, 1869. Printed in Proceedings, August, 1869.
Cley, W. M., Esq.	...	... Archaea as described by Dionysius the Geographer, in his voyage round the World, ... June, 1869. Printed in Proceedings for May, 1869.
Cole, R. A., Esq.	...	... Extracts from a report on Cronleachs in Southern India, 10th March. Ditto in Journal, Pt. II, No. 4, 1869.
Cooper, T. T., Esq.	...	... Notes on Western China, ... 20th April, 1869. Ditto in Proceedings for May, 1869.
Fryer, Capt. G. E.	...	... A contribution to our knowledge of Pelagic Mollusca, 16th Dec. 1868.* Ditto ditto, Pt. II, No. 3, 1869. [March, 1869.]
Godwin-Austen, Capt. H. H.	...	... Notes on the Geology and Physical features of the Jaintia hills, 16th Dec. 1868. Ditto in Proceedings for Great Earthquake of January 10th, 1869. Ditto in Proceedings for
Ditto ditto,	...	... Notes from Assam, North Cachar, on the Great Earthquake of January 10th, 1869. Ditto in Proceedings for

* Not acknowledged last year.

Authors.	Titles of Papers.	When received.	How disposed.
Godwin Austen, Capt. H. H.	Notes on Indian Molluscs, No. 1,	18th Jan., 1869 with additions up to Dec., 1869.	To be printed in Journal, Pt. II, No. 1, for 1870.
Growse, F. S., Esq., M. A. C. S. ...	Further notes on Chandi's poems,	17th Feb., 1869.	Printed in Journal, Pt. I, No. 1, 1869.
Ditto ditto, ...	Indian Proverbial Philosophy, ...	23rd July, 1869.	Publication deferred.
Jenkins, H. L., Esq.	Notes on the Burmese route from Assam to the Hookoong-valley (Patkoi-Range,) (with a map), ...	... Jan., 1869.	Printed in Proceedings for Feb., 1869. Ditto ditto for April, 1869.
King, G., Esq., M. B.	Notes on the famine foods of Marwar, ...	March, 1869.	
Kurz, S., Esq. ...	On some new or imperfectly known Indian plants, ...	12th Dec., 1869.	To be read at the January meeting of 1870.
Meredith, J., Esq., M. D. ...	Notes on the topographical features of As- sam and their indications, ...	20th Mar., 1869.	Abstract (only), printed in Proceedings for June, 1869.
Mitchell, R., Esq., F. R. G. S.	A copy of a journey to Kashgar, 1858, by Capt. Volkhanof, translated from the Russian, ...	2nd Feb., 1869.	Publication deferred.
Newall, Lieut.-Col., D. J. F.	Notes on the temples of Razian in the Lar Pergunnah, ...	June, 1869.	Printed in Journal, Pt. I., No. 4, 1869.

Appendix A.

Novill, Messrs. G. and H. ...	Descriptions of Marine Gastropoda from Ceylon, ...	3rd Feb., 1869.	Ditto in Journal, Pt. II, No. 3, 1869.
Oldham, T., Esq., L. L. D.	Notes on the remains found in a Cromlech at Coorg, ...	1st Sept., 1869.	Ditto in Proceedings for Sept., 1869.
Peal, B. E., Esq.	Short notes of a trip into the hills south of Shreaugor, ...	Jan., 1869.	Abstract printed in Proceedings for March, 1869; printing of the paper in full deferred on account of the very numerous illustrations which cannot be executed at present.
Phayre, Col. Sir A., K. C. S. I.	The History of the Burmah Race, Pt. III., 2nd April, 1869.	Printed in Journal, Pt. I, No. 2, 1869.	
Pratapchandra Ghosha Bâbu, C. B.	Notes of a translation of Balandshâher Inscription, ...	13th Mar., 1869.	Ditto ditto Pt. I., No. 1, 1869.
Hakladâs Hâlâtâr, Bâbîn, ...	Notes on a copper plate inscription in the possession of certain Kols, at Chota Nagpore, ...	... July, 1869.	Ditto in Proceedings for August, 1869.
Showers, Lieut.-Col. C. L. ...	On the Meenas, a wild tribe of Central India, 2nd Sept., 1867, with additions up to Aug., 1869.	Ditto ditto for September, 1869.	
Stoliczka, Dr. F.	... Contributions towards the knowledge of Indian Arachnoidea, ...	7th April, 1869.	Printed in Journal, Pt. II, No. 4, 1869.

Appendix A.

Authors.	Titles of Papers.	When received.	How disposed.
Surveyor General (through Baba Gopinauth Sen), ...	Tabular statement of monthly rain fall from January, 1837 to November, 1868, monthly means of the principal meteorological elements and actual rain fall from 1856-1867; abstract of meteorological observations, taken at the Surveyor General's Office, Calcutta, from Septem- ber, 1868 to October, 1869, ... Notes on the stone implements of Bur- mah, ...	June, 1869.	Printed in Journal, Pt. II, No. 1-4.
Theobald, W., Jr., Esq., ...	Notes on some Agate Beads from North- Western India, ...	Sept. 1869.	Printed in Proceedings for July, 1869.
Ditto ditto, ...	The district of Luliâna, ...	17th May, 1869.	Ditto ditto, for Oct., 1869.
Felbort, T. W. H., Esq., C. S. Waddie, D., Esq.	Analysis of the Khetree Meteorite with an account of its fall, ...	2nd June, 1869.	Ditto in Journal, Pt. I, No. 2, 1869.
Williamson, Lieut., W. J. ...	A Vocabulary of the Garo and Konch Dia- lects, ...	2nd April, 1869.	Ditto ditto, Pt. II, No. 4, 1869.
		...	Ditto, Pt. I, No. 1, 1869.

APPENDIX B.

List of Donations, (not including books, or other publications, and MSS., these being acknowledged in the monthly library lists.)

Donors.	Donations, those marked with an asterisk, were transferred to the Trustees of the Indian Museum.
Bruce, J. E., Esq.	*Three specimens of <i>Eurhino-rhynchus pygmæus</i> , in spirit, from Chittagong.
Caggard, H. A.	*Remnants of a human skeleton found while excavating a drain in Kyd Street, Calcutta.
Cantopher, M., Esq.	Two copper coins of Antoninus Pius and of Galba.
Cole, Capt., R. A., through the Chief Commissioner, Mysore, ...	*Four earthen pots, six beads and a ringlet found in a Cromlech in Coorg.
Ferrar, M. L., Esq., C. S. ..	Three ancient copper coins dug out in Roy Bareilly.
Government of India, Home Department,	24 Bronze Medals, executed at the Calcutta Mint.
Ditto ditto,	A set of 20 photographs of the caves and temples of Nassick, taken by Mr. Sykes, Photographer, Bombay.
Leupolt, J. C., Esq., C. S.	*Some earthen medallions bearing inscription, and a bronze figure of Buddha.
Mádhavá, Krishná Setha, Bábu,	*Specimen of a <i>Fungus</i> from Calcutta.
Oakes, Col., R. E. ...	*A box of flint implements from Jubbulpore.
Oldham, W., Esq., L.L. D.	Specimens of bricks, bearing inscription found at Musar, near Arrah.
Rájendra Lála Mitra, Bábu,	*Shells collected on the sea-shore, near Puri.
Smolly, W. M., Esq.	*Specimens of Corals from the Andaman Islands.
Stubbs, Major, F. W. Yádánatáhá Basu, Bábu,	Two silver coins of Jahángir. A Mahomedan copper coin.

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60	34	" Sirdár Atlar"	Sirdár Attar
61	11-12	" 'Owar Khoyyam"	'Omar Khayyám
63 & 67	12-18 (et seq.)	" A. C. Peal"	S. E. Peal
74 (et seq.)	17 (et seq.)	" Peal"	Peal
	pp. 76, 78,		
	79, &c.		
75	18	" Haberlin"	Hæberlin
88	19	" Sixth"	Fifth
90	5	" nám tu"	nám i tu
105 (et seq.)	10 (et seq.)	" A. E. Carlleyl"	A. C. L. Carleyle
	p. 183, &c.		
108	24	" Gubbay"	Gubboy
112	34	" Párs"	Pau
121	30	" Frayer"	Fryer
126	6	" T. W. Rawlin"	T. W. Rawlins
127	3	" Rámahmaya"	Rámañmaya
128	7 & 9	" Yajus"	Yajus
	27	" Bráhmya"	Bráhma
129	8	" codices of two or three commen- taries"	two or three codices of the commen- taries
	16	" between"	of between
"	18	" Dupetron"	Duperron
133	8	" the initial line"	initial lines
134	5	" there"	their
"	30	" वार्णव"	वार्णव
"	34	" वैदिक"	वैदिक
136	8 & 15	" वर्णालाल"	वर्णालाल
	19	" वार्णववर्णवालाल"	वार्णववर्णवालाल
143	5 & 20 & last.	" वर्णालाल"	वर्णालाल
162	15	" F. W. Rawlin"	T. W. Rawlins
175	33	" A. L. Clay"	W. M. Clay
177	28	" A. C. Cameron"	A. M. Cameron
215	17	" a wife"	a daughter
217	9-10	" and to a daughter of Muzaffar Hu- sain (Tuzuk p. 76)"	
	21	" Renshan Ráí"	Renshan Ráí.
			omit.

PROCEEDINGS
OF THE
ASIATIC SOCIETY OF BENGAL,
FOR JANUARY, 1869.

The Annual General Meeting of the Asiatic Society of Bengal was held on Wednesday the 20th January, 1869.

T. Oldham, Esq., LL. D., President, in the Chair.

The Secretary read the Council's report for the past year.

ANNUAL REPORT.

The Council of the Asiatic Society, in submitting their annual report for 1868, have the satisfaction of congratulating the Society on its continuing prosperity, both in respect to the increase of members, and the improved status of its finances.

The heavy debt, brought to the notice of the Society in the last Annual Report, has been materially decreased, while the actual expenditure during the past year exceeds the estimate, laid before the Society in January 1868, by a very small sum. The Council confidently hope that by adhering to the course of rigid economy, followed out during the past year, they will, in a short time, be able to free the Society from its debt, and recommend a more liberal outlay for its library and publications, than they felt justified in sanctioning in the past year.

During the year 1868, there has been an accession of 42 new members, while the Society lost 7 Ordinary members by death, two more than in the preceding year, and 20 by resignation, the same as in 1867. Thus the actual loss amounts to 27 members. Besides, the names of four members have been struck off the list. At the close of 1868, the total number of ordinary members was 427, of which 294 were paying, and 133 absent, members. At the close of 1867, the total number of members was 416, of which 307 were

paying, and 109 absent members. Thus while the total number of members during 1868 rose from 416 to 427, there has been a temporary decrease of paying members from 307 to 294.

The following is a tabular statement showing the fluctuation in the number of paying and absent members during the last ten years.

		<i>Paying.</i>	<i>Absent.</i>	<i>Total.</i>
1859	.....	135	45	180
1860	.....	195	47	242
1861	.....	225	55	280
1862	.....	229	82	311
1863	.....	276	79	355
1864	.....	288	92	380
1865	.....	267	109	376
1866	.....	293	94	387
1867	.....	307	109	416
1868	.....	294	133	427

Two members of the Society were in the past year elected Honorary Members, A. Grote Esq., the late President of the Society, and Dr. T. Thompson. To the list of Honorary Members, the names also of General A. Cunningham and Professor Bápudeva Sastri were added. Mr. F. H. Foucaux of Paris, and Professor Holmboe of Christiania were elected corresponding members of the Society. Of the ordinary members of the Society, the Council regret the decease of the Honorable Prosonno Coomar Thakur, C. S. I., Calcutta; the Honorable A. A. Roberts, C. B., C. S. I., Resident Hyderabad; Maulvi Maulá Bakhsh, Khán Bahádur, Patna; Mr. H. D. Robertson, C. S., Saharunpore; Mr. C. B. Thornhill, C. S., Allahabad; Mr. S. Fenn, Attorney, Calcutta; and Mr. F. Hill, Professor of Civil Engineering, Calcutta.

MUSEUM.

At a special general meeting held in November last, formal sanction was given to the transfer, to the Trustees of the Indian Museum, of all the Society's collections, except those of books, coins, pictures and busts.

FINANCE.

The active measures taken in 1867 to diminish the expenditure of the Society were continued during last year. In the beginning

of 1868, the Budget was very carefully discussed. A plan of expenditure for the whole year was laid out, and care was taken, not to exceed the amount sanctioned in the Budget.

INCOME.

	<i>Estimate.</i>	<i>Actual.</i>	<i>Deficit.</i>	<i>Excess.</i>
Admission fees,.....	1,200	1,280	0	80
Subscriptions,	8,400	9,771	0	1,371
Journal,	1,000	1,425	0	425
Library,	350	479	0	129
Secretary's Office,.....	25	15	10	0
Coin Fund,	25	36	0	11
	—	—	—	—
Total,.....	11,000	13,006	10	2,016

EXPENDITURE.

	<i>Estimate.</i>	<i>Actual.</i>	<i>Saving.</i>	<i>Excess.</i>
Journal,.....	5,000	4,248	752	0
Library,.....	2,150	2,830	0	680
Secretary's Office,.....	2,000	2,037	0	37
Building,	1,000	1,136	0	136
Coin Fund,	300	339	0	39
Miscellaneous,	350	577	0	227
Museum Catalogues,..	200	18	182	0
	—	—	—	—
Total,.....	11,000	11,185	934	1,119

The above statement shews that the actual expenditure for last year has exceeded the estimate by a sum of Rs. 185. This excess, however, was sanctioned by the Council at the recommendation of the Finance Committee, to whom all questions of extra expenditure were referred. The actual income of the year on the other hand exceeded the estimate by Rs. 2006. This sum, together with a portion of the balance of 1867, was appropriated to the payment of Printer's bills, which at the close of 1867 amounted to the enormous sum of Rs. 7000. The cost of printing the Journal and Proceedings for last year amounted to Rs. 3800, which, added to the liabilities of 1867, makes up a total of Rs. 10,800. The sum of Rs. 7,800 has been paid out of the above total, leaving a balance of Rs. 3,000. To pre-

vent the accumulation of debts, the Finance Committee have arranged to pay off within one month after presentation, all bills submitted for payment.

The following statement is an abstract of accounts of last year.

Admission Fees, ...Rs.	1,280	0	0	Contributions,.....Rs.	50	5	3
Contributions,	9,771	12	0	Journal,	7,807	8	9
Journal,	1,425	2	3	Library,	2,830	8	11
Secretary's Office, ...	15	2	0	Secretary's Office,.....	2,037	14	0
Library,	479	11	6	Vested Fund,	0	4	4
Vested Fund,	110	0	0	Coin Fund,	339	15	0
General Establishment,	1	11	3	Building,	1,136	8	3
Coin Fund,	36	0	0	Miscellaneous,	577	4	0
Museum,	280	0	0	Oriental Publ. Fund,	856	0	0
Inefficient,	48	8	0	Messrs. W. & Norgate,	1,955	15	8
Oriental Publ. Fund,	489	12	0	Sir W. J. s Monument,	680	0	0
Messrs. W. & Norgate,	2,132	11	8	Sundries,	196	11	9
Dr. J. Muir,	1,000	0	0				
Sundries,	226	8	6		18,468	15	11
	17,296	15	10				
Balance of 1867—				Balance—			
In the Bank of Bengal, 3,487	12	0		In the Bank of Bengal, 2,261	10	9	
Cash in hand,.....	38	8	4	Cash in hand,	92	9	7
	3,526	4	5		2,354	4	4
Total,.....	20,823	4	3	Total,.....	20,823	4	3

The Council have much satisfaction to report that they have succeeded in reducing the heavy outstandings of last year, but by the loss of several members, outstandings to the amount of 400 Rs. are to be written off.

The following will shew the financial condition of the Society.

Cash assets. Outstanding. Gross assets. Liabilities.

1868	4,354	8,523	12,877	5,688
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The Council would urge on the members the imperative necessity of regularly paying their quarterly contributions, in order that the Society may meet its expenses for the coming year without being obliged to curtail its usefulness by any further retrenchments. The state of the library warrants a greater outlay than the present financial condition of the Society allows.

The following is their Budget for the coming year. The income has been estimated from the average income of the last few years. Any excess of income over the estimate will be, as in 1868, devoted to the payment of old debts.

INCOME.

	Rs.	As.	P.
Admission fees,	1,200	0	0
Contributions,	9,200	0	0
Journal,.....	1,200	0	0
Library,...	350	0	0
Coin Fund,	50	0	0
	Total, Rs. ... 12,000 0 0		

EXPENDITURE.

	Rs.	As.	P.
Journal,.....	5,000	0	0
Library,	3,200	0	0
Secretary's Office,	2,000	0	0
Building,	800	0	0
Coin Fund	300	0	0
Miscellaneous,	700	0	0
	Total, Rs. ... 12,000 0 0		

OFFICERS.

On the departure of Mr. A. Grote for England, Dr. J. Fayerer was elected Vice-President. Mr. H. F. Blanford, in the beginning of May, resigned the general secretaryship. Bábú Rajendralala Mitra for some time, carried on the correspondence of the Society in addition to his own duties as Philological Secretary. In July last, the Council appointed Mr. H. Blochmann, General Secretary of the Society. A change also took place in the Natural History department, Dr. J. A. P. Colles being obliged, towards the end of May last, to leave Calcutta, Dr. F. Stoliczka took charge of his office. Mr. H. F. Blanford officiated as Treasurer during the temporary absence of Col. J. E. Gastrell.

Bábú Protapa Chundra Ghose, Assistant Secretary and Librarian, and Bábú Money Lál Byak, Assistant Librarian, have been active and assiduous in the performance of their duties, and the Council have pleasure in recording their satisfaction with their services.

The number of the Society's publications having largely increased, the Council, during last year, thought it necessary to appoint a store-keeper, who together with the Librarian has drawn up a correct list of the Society's stock.

JOURNAL.

The volume for 1868 is a little more bulky than that of 1867.

Of the first, or philological, part, 138 pages have been published in two numbers; and of the second, or the Natural History part, 218 pages and five plates, together with an index in four numbers.

Of the Proceedings, 302 pages have been published in twelve monthly numbers, together with the usual index. The Proceedings have also been illustrated by five plates.

The Journal and Proceedings thus extend over 658 pages, or 55 pages more than in 1867. In addition to this, there have been issued 216 pages of meteorological observations, and an Extra Natural History number of 88 pages, containing Mr. Theobald's Catalogue of Reptiles in the Museum, the printing of which had been commenced three years ago.

LIBRARY.

During last year, there were added to the Library 610 volumes, periodicals, and pamphlets.

COIN CABINET.

During the past year a batch of coins was purchased from a Bukhara dealer, containing many Phoenician and Muhammadan coins. The Committee also purchased a tetradrachma of Antimachas Theos, in good preservation, and another of Demetrius. The former was described in July's Proceedings.

BIBLIOTHECA INDICA.

The Persian Series of the Bibliotheca Indica has been carried on with great activity. Eighteen fasciculi of different historical works have been issued, as also the first fasciculus of an English translation of the *Ain i Akbari* by Mr. Blochmann. The *Pádisháh-náma* by Abul Hamid of Lahor, and the *Klaungírnáma* by Muhammad Kázim have been completed by Maulvis Abdurrahim, Khádim Hussain, and Abdul Hai, of the Calcutta Madrasah. The completing portion of Badáoni's *Muntakhab*, edited by Maulvi Aghá Ahmad 'Ali is shortly expected to be issued. Of the *Ain i Akbari*, three fasciculi have

been edited by Mr. Blochmann. Of a new work, Kháff Khán's *Muntakhabul lubáb*, Maulví Kabíruddín Ahmad has edited four fasciculi.

The Council have much pleasure in stating that their editions of the Muhammadan historians of India, according to the plan of the late Sir Henry Elliott, are thus rapidly approaching completion.

The progress of the Sanscrit Series of the *Bibliotheca Indica* was greatly interfered with by the death of several editors and the loss of MSS. Altogether six fasciculi have been issued. Measures have been taken to push on the publications during the ensuing year.

The following is a list of the several works published during the past year.

Sanscrit.

The Grihya Sutra of Aswaláyana, with the commentary of Gárgya Nárayána, edited by Anandachandra Vedántavagisa, Nos. 132, 143. Fasc. II and III.

Sankara Vijaya, or the life and polemics of Sankara Acháryya, by Ananda Giri, edited by Jayanáráyana Tarkapauchánana, Nos. 137, 138, Fasc. II and III.

The *Mimansa Darsana* with the commentary of Sávara Swámin, edited by Pandita Mohesachandra Nyáyaratna, No. 142, Fasc. IV.

The *Taittiriya Aranyak* of the Black Yajur Veda with the commentary of Sáyanachárya, edited by Rájendralála Mitra, No. 144, Fasc. VI.

Persian.

The *Muntakhab ut Tawárikh* by Abdulqadir ibn i Mulük Sháh i Badáoni. Edited by Maulví Aghá Ahmad' Alí, Vol. I. Nos. 131, 135, 136, 139, 140, Fasc. I to V.

Do. do. Vol. III. Nos. 145, 146, 152, 153, Fasc. I to IV.

The *Pádísháhnámah* by Abdul Hamíd Láhaurí, edited by Maulvis Kabíruddín Ahmad and Abdurrahím No. 133, Fasc. XVIII.

The *A'lamgírnámah* by Muhammad Kázim ibn i Muhammad Amin Munshi, edited by Maulvis Khádim Husain and Abdul Hai, No. 134, Fasc. XII.

The *A'in i Akbarí* by Abul Fazl i Mubárik i 'Allámí, edited by H. Blochmann, M. A., Nos. 120, 122, 141, Fasc. IV, V and VI.

Do. do. *English translation* by H. Blochmann, M. A. No. 149, Fasc. I.

The *Muntakhab al lubab* by Kháfi Khán. Edited by Maulví Kabíruddin Ahmad. Nos. 147, 148, 150, 151, Vol. I. Fasc. I to IV.

It was proposed by Col. R. Strachey, and seconded by Col. Thuillier that the report be adopted.

The proposition was put to the vote, and carried unanimously.

The meeting then proceeded to elect the Council and Officers for the ensuing year.

It was proposed by the President and agreed to, that Mr. D. Waldie and Mr. W. T. Blanford be appointed Scrutineers of the ballot.

The President said that he had, with much regret, to announce to the meeting that their excellent Secretary Bábú Rajendralala Mitra was prevented from being present by serious illness. This illness was the result of his exposure in the malarious jungles of Orissa, during his recent antiquarian tour in that province; he (the President) had communicated with Bábú Rajendralala, with reference to the arrangements for conducting the philological portion of the Society's labours during the coming year, and the other claims which were certain to be made on his time. And Bábú Rajendralala in his reply states, that 'he would not, under any circumstances, be able to resume work for six weeks to come, that the first claim on his time would be the preparation of a report of his late unfortunate tour, for which he had materials which would fill some 400 pages 4to., and then there was also the preparation of the proposed Catalogue of Sanskrit works, required for Government which should be got up in a manner worthy the name of our good old Society.' He adds; "to do these works properly, I shall have to devote all my leisure hours to them, and under the circumstances, I must resign the Secretaryship."

It was with great regret that the President announced this resignation, and he felt sure that the Society would join with him in a very hearty expression of the obligations they were under to Bábú Rajendralala Mitra for his constant devotion to their service, and for the able and independent way in which he had ever conducted the duties of the several offices he had held under the Society. He felt that

it would be unnecessary to put this more formally but that it would be seconded by the meeting at large.—Passed with acclamation.

It was also proposed by Col. Thuillier and seconded by Dr. Stoliczka, that Mr. F. Peterson and Mr. R. D. Stewart be requested to audit the accounts of the Society.

The proposition was put to the vote and carried unanimously.

During the time that the ballot was proceeded with, the President brought to the notice of the meeting the new code of rules, as proposed by the Council. The President said—that it would be in the recollection of the members, that, for years past, there had been very frequent changes made in the Bye-laws of the Society. These alterations were generally brought up individually, and thus were frequently considered without a full investigation of their bearing on other parts of the rules. The whole series had thus become, in several respects, contradictory and inconsistent. Many years since, a Committee of the Council had been appointed to revise these rules generally and submit a new set. This Committee had met several times, and had made some little progress with the task entrusted to them, when the departure from Calcutta of some of its members led to a cessation of its labours; and nothing further was then done. The attention of the Council had been more forcibly directed to the necessity for a general revision of the laws during the last year, by the fact that the supply of the rules, of which each new member is by the laws to receive a copy, had become exhausted, and it was necessary to reprint. A Committee therefore had been nominated, consisting in part of members of the Council of the Society, in part of other members not in the Council, to whom the whole question was referred. This Committee met frequently, and very fully, and in great detail, discussed all the rules; consulted the rules of other Societies to see in what their experience might aid, and after long and frequent deliberations they submitted to the Council the series of rules proposed by them. These rules were then gone over, *seriatim*, by the Council, and considerable alterations in arrangement, in wording, and in a few cases in principle, were introduced.

The rules as thus agreed to by the Council were then printed and brought before the Society at large. A copy of these rules had been sent to *every member*, whether resident or non-resident, with a request

that they would consider the provisions, and would either send their votes, or, as usual, attend this meeting for the discussion of the rules. From the non-resident members a large number of voting papers have been received, all, with very trivial exceptions, being in favour of the rules as proposed. These exceptions he would bring before the meeting in due course.

He mentioned these facts, shewing the care with which the rules had been drawn up and discussed, not as, in the slightest degree wishing to restrict discussion on them now,—he trusted the Members of the Society would give to them as full and detailed consideration as the Committee and Council had,—but merely to express a hope that no trivial or merely verbal alteration would be urged which, without at all affecting the principles involved in the rules, would still necessitate the sending back such alterations for the consideration of the mofussil members. He did not anticipate that the rules were perfect, or that objections would not arise, but he hoped, that unless these objections appeared important, the rules might be allowed to pass, so that the Council might have them printed off, and circulated to the members.

With these few preliminary remarks he would now go through the rules *seriatim*, and with the permission of the meeting he would propose to take them in sections, as they were arranged in the copies before the members, noting as he went along the several alterations which had been introduced, and any alterations which have been suggested.

Rule 1 was then adopted.

In Rule 2, clause (a), it had been proposed by one mofussil member that the word thirty be changed to ten. It was stated that members residing within ten miles might be considered as able to take advantage of the privileges of resident members to attend the meetings &c., but that those resident at a greater distance scarcely could. The alteration was put to the meeting, and rejected.

Rule 2, was then put, as proposed by the Council, and carried.

Rules 3, 4, 5 and 6, were then put and carried.

Rules 7 and 8, were also put to the vote, and carried.

In rule 9 clause (b) the President stated that it was proposed by one member that the subscription for *non-resident* ordinary members should be 10 Rs. per annum. Several members expressed an opinion that the

subscription generally might be reduced. It was explained, that the amount proposed would not actually cover the cost of the publications given to the members, with the present numbers. It was then put to the meeting — that the words 6 Rs. per quarter shall be changed to 10 Rs. per annum in Rule 9 clause (b). This resolution was negatived.

Rules 9, 10, 11, 12 were then put to the meeting and carried.

Rules 13, 14, 15, 16, 17, 18 were then put to the meeting and carried.

On putting to the meeting Rule 20, it was moved by Mr. W. Blanford, and seconded by Dr. Smith that this rule be omitted. After some discussion, as it appeared that the rule would not cause any change for twelve months, which would allow ample time for deliberate consideration of the principle involved, the resolution was put to the meeting and negatived.

It was then moved by Dr. Fayer and seconded by Mr. Reinhold, that the remainder of the rules be adopted without further discussion. Several members thought it desirable that opportunity should be afforded for the consideration and discussion of the rules in detail. The resolution being put to the meeting, was negatived.

Rules 19, 20, 21, 22, 23, 24, 25 and 26 were then put to the meeting and adopted.

Rules 27, 28, 29, 30 and 31, were then put to the meeting and adopted.

Rules 32 and 33, were in like manner adopted.

Rules 34 and 35, were then put to the meeting and adopted.

Rules 36, 37, 38, 39, 40, 41 and 42 were then put to the meeting and adopted.

The President then moved, that in Rule 43, the date of the present meeting be inserted as the date from which these rules should have effect. —Carried.

The President then moved, that the Rules as now passed *seriatim* be the Rules of the Asiatic Society of Bengal : which was carried.

The President thanked the meeting for the patience with which they had gone through these Rules in detail.

The ballot having been taken, the Scrutineers announced that the following gentlemen had been elected to serve as Members of Council and Officers for the ensuing year.

Dr. Th. Oldham, *President.*

Dr. J. Fayerer, C. S. I.,
The Hon'ble J. B. Phear,
Kumara Harendra Krishna, } *Vice-Presidents.*

E. C. Bayley, Esq.

Dr. Th. Anderson.

Dr. J. Ewart.

Col. H. Hyde.

Bábu Devendra Mullicka.

The Hon'ble J. P. Norman.

Dr. S. B. Partridge.

Bábu Rajendralála Mitra.

Col. J. E. Gastrell,

Dr. F. Stoliczka, } *Treasurer and Secretaries.*

H. Blochmann, Esq., }

The President then read the following address.

PRESIDENT'S ADDRESS.

GENTLEMEN,—The close of another year naturally suggests to those interested in the welfare of our Society a brief review of the labours in which we have been engaged during that time. The recurrence of such Anniversaries affords also a fitting opportunity of resting for a while from the constant strain of current work, and calmly recalling the past, endeavouring to extract from such a retrospect a just conception of what our progress, if any, has been; what our failures, and there are certain to have been some, have resulted from; what our hopes of future success may be. We shall thus be the better prepared to enter on the duties of the coming year; and the better able to face the difficulties we are sure to meet, if we know what is their nature, and what their limits are.

It had been my intention to have taken, on this occasion, a general review of the progress of knowledge in those departments of enquiry, to which the Society has more especially devoted itself during the year now closed; to have seen, how far this Society had contributed to that progress, if at all; how far we were lagging behind in the onward race, and to have enquired also how far, and in what way, it might be practicable to encourage the efforts of our members, to evoke their more zealous exertions, and to facilitate their success. But having held the chair of your Society for only a part of the year, and seeing also that the several contributions to our meetings must all be fresh in the memory of the Members, I think it will be scarcely necessary or desirable to attempt a summary review of the papers which have been read. These will be quite as well known to those interested in such enquiries, as they are to myself. And they are perhaps too recent to admit of a just estimate being formed of their true bearing on the general progress of knowledge. The regular, and rapid issue of the Proceedings of the Society, in which are full reports of the several meetings held during the year, absolves your President largely from the duty incumbent on him of recalling your labours. On the other hand, as now one of the older members of this Society, and as one who from the first year of being in this country,

has never ceased to take a deep interest in its welfare and success, I hope I may be permitted without presumption to take a cursory view of the changes which have taken place in the constitution of our body, and of those which must be anticipated; and I would fain hope that such a review will not be without interest and value.

The report of the Council read to you this evening will have made you acquainted with the numerical condition of our Member list at present. It shews that we have on our rolls now 427 Members of whom 294 are in India, while the large number of 133 represents those away from this country. It will be seen also, on comparing these numbers with those of former years, that there has been a large increase in the number of these absent members, to some extent due to more liberal rules for leave, sanctioned during the year, so that, while we had an addition during the year of 42 new members,—and the total number of members now on the list is larger than it has ever been—there has been actually a diminution in the number of paying members of 11. Hitherto it has been the practice to retain on the Member-roll, the names of those who had been members, but who had left India. Very many of these never had any intention of returning to this country. And the retention of their names in the list largely tended to give to the Society an apparent strength which it in reality did not possess. Such absent members have not been in any way contributing members, and have therefore not added to the support of the Society. The new rules this evening sanctioned will I trust tend to reform this. They provide that any person, who has been a member, can on leaving this country secure to himself, during his absence, the publications of the Society by payment of 12 rupees per annum, and can resume his membership rights on his return; while the names of such as leave the country, and do not within three years from the date of leaving express their wish to continue members, shall be, after the lapse of that time, struck off the rolls. It is hoped, that in this way, the managing body of your Society will be able to know with a much nearer approximation to accuracy, than can now be attained, the real amount of income and support to be derived from the members. The anomaly of continuing on our rolls the names of many, who have ceased to be in any way connected even with India, will be removed, while every encouragement is at the

same time held out to induce others to maintain a real, and I may add a profitable, association with the Society.

I have said that the number now on the rolls is larger than at any previous period of the Society's existence. And in so far as this is the case, we may, I think, fairly congratulate ourselves on the fact. Undoubtedly this has been largely brought about by the wise measure of reducing the amount of the annual contributions required from members, which, long anxiously and earnestly urged upon the Council, was at last sanctioned in 1859; since that time the number of members has increased from 180 to 427. It seems to me that we might, with great wisdom go further still in the same direction. Looking either to the value of the publications of the Society (the only return which non-resident members receive for their contributions), or the amount of subscription demanded from members of similar Societies in Europe, and the comparatively greater advantages which members of such Societies enjoy, I think the Asiatic Society of Bengal would do wisely to reduce still farther the monthly contributions from its members.

But while congratulating you on this increase of number, there seems to me another and a more important point of view, from which to study the numerical results given in the Council's report. Gentlemen, the Asiatic Society of Bengal is to this day, I may say, the only Society in this portion of the Indian Empire, specially devoted to the cultivation of pure science. Its publications, extend in an unbroken series over more than eighty years. Devoted to Oriental Literature, Science, Antiquities, Geography and Art, they form a repertory of the most valuable and curious information on every subject connected with this Empire, and are, as I believe, one of the grandest monuments of British dominion, and one of the noblest proofs of British intelligence in the East. Without them, no student can satisfactorily investigate the learning, the languages, the history of this empire. They contain the life-long labours of some of the greatest discoverers in, and some of the noblest contributors to, Oriental knowledge. The Society is still vigorously pursuing the same course. And yet among the many thousands of educated Europeans in this country, and the many thousands also of well informed Native gentlemen, this, the chief and almost the only scientific Society in this part of the Empire, counts its supporters and contributors by only a few hundreds !

There must be good and sufficient reasons for this, and it is worthy of careful enquiry to ascertain, if possible, what these may be.

Again, during the past year, the Society has lost by retirement no less than 20 members; during the preceding year, 20; in 1866, 19; in 1865, 25. I confess I always listen to these announcements of retirement with great pain, accompanied by a guilty consciousness of having myself, as an individual element in the management of the Society, contributed to the result. I think it may be assumed as a fact, that no one will willingly abandon a position which he considers to be advantageous. There have doubtless been frequently private or pecuniary reasons for such; but in by far the majority of cases, I fear we cannot admit that these have been the cause of the numerous retirements. And we must, I am convinced, seek for a more deeply seated, a more vital reason, and admit that the faults are to a large extent internal in the Society. Have we done what in us lay to render the fact of association with us an advantage to the members themselves? I would not for a moment desire to overlook the consideration, that many join the Society from a desire to promote its efforts and advance its researches, without seeking any individual advantage. We gladly acknowledge that there are many such. But unquestionably the majority of our members do, on joining this, or any other Society, look forward to receiving some advantage in return for their contributions, and do calculate also whether these advantages are worth their cost. Now what advantages of this kind do we offer to our Members? All obtain the Journal and other publications of the Society, resident members have also the opportunity of being present at the meetings of the Society, and of freely borrowing books from the library.

First then as to our Journal. I have no scruples in confessing, although I do so with very great regret, that its appearance has been for many years past too irregular, too unpunctual, and uncertain, to enable members even to know whether they would ever receive it or not. Numbers of one year issued late in the succeeding year; others issued without the plates referred to in them, which plates have appeared in some subsequent year's publication; these, gentlemen, have, I am ashamed to say, been the rule rather than the exception. Would any of us continue our subscription to a periodical issued in this

unsatisfactory way? And are we justified in expecting that our Journal will be appreciated, if such be continued? But beyond this, the contributors to the Journal themselves never knew when their papers would appear; there often was no rule observed as to priority of contribution, giving a claim to priority of publication. The practice had grown up of merely announcing to the meetings of the Society the receipt of papers, of which only the titles were given, and nothing more was heard of them, until they appeared in the Journal, perhaps years afterwards, or were possibly returned to their authors. During the past year I rejoice to be able to announce to you that by the strenuous exertions of your Secretaries, much has been done to remedy these defects. No one here can be more painfully or practically aware of the immense difficulty of providing for the punctual appearance of the Journal and Proceedings, than I am myself. These difficulties are the greater, because the result depends not on the efforts of an individual but on those of many: the printer, the artist, the lithographer, &c.; delays may arise from each and all of these, and in addition there are climatal difficulties which can scarcely be foreseen, and sometimes even, if foreseen, can scarcely be guarded against. But while admitting all these, we felt the delay was not insurmountable, and determined not again to ask the Society to believe it unavoidable. Since I have had the honour of taking the chair, the Proceedings have always been issued to you before the ensuing meeting, the illustrations have always accompanied the paper to which they referred, and the completion of the volume for the year, with title and index, was in your hands, before the close of December. This volume is larger, and has more illustrations than preceding ones. The numbers of the Journal have also all appeared; of the first Part, two completing the issue for the past year, and of the Physical Science Part, four numbers with index, contents, title, &c., have all been issued before the close of the year, although the first number had only been commenced in March. An extra number was also issued containing Mr. Theobald's Catalogue of Reptiles, which had been actually in the press for three years; and meteorological Reports were published, extending over a period of nearly two years.

Further, there has not been a single paper of any kind submitted to the Society for publication, which has not either been read in full,

or of which an abstract has not been given, at the meetings, and in all cases the opportunity at least for free discussion of those papers has been given, and such discussion invited. This I consider of high importance, as one of the great advantages of such an association arises from the opportunity its meetings afford of eliciting the views of its members on the subjects brought forward, and thus generating the glow of intellectual enjoyment and intellectual success, by the friction of mind against mind. This advantage is entirely lost when papers are merely laid on the table. At the same time it was found that there remained over several papers, the printing of which had been ordered long before, but which had been laid aside for the publication of others possessing more immediate interest. These have now been all printed in your Journal and, as nearly as the size of the several numbers of the Journal would admit, in the order of succession of their dates of submission to the Society. And now I have the pleasure of telling you that the first number of the Journal, Part II, for the present year 1869, has this evening been placed upon the table, by your Natural history Secretary. This brings up the publication of papers read to the Society to June last; that is to within six months of the date of issue. Gentlemen, I consider this most highly satisfactory, and we owe much to Dr. Stoliczka for the zeal and devotion he has shewn in bringing about this most desirable change. We hope that the same system will be maintained; that, as far as the funds of the Society admit, all papers, excepting under peculiar circumstances, and by special order of the Council, shall be published in the order of the date of submission, and without any repetition of delays, which have been thus shewn to be avoidable.

The Proceedings of the Society again under this system have been really what they assume to be, and the volume for last year, a goodly sized volume of more than three hundred pages, contains much that is valuable and highly interesting; and will, I feel certain, bear very favourable comparison with the records of proceedings of any other similar institution, as giving evidence of healthy vigour and active progress in the life of the Society.

So far I have spoken of the publications of the Society. The other advantage we offer to our members, in return for their contributions is the Library. And with reference to this, I am much pained to say,

that it has not been in our power to do as much as we could have wished. The Council have been fully impressed with the vast importance of this portion of the Society's efforts, but the absolute necessity of pursuing a system of the very strictest economy has prevented the outlay of a single rupee that could be avoided. The allotment of money sanctioned out of the income of the Society at the commencement of the year has been very slightly exceeded (under sanction of the Finance Committee and Council), but there was much, very much, that we desired to do, very much that we were anxious to add to our library but could not. For the coming year, the Council suggests an allotment of money somewhat larger than that of last year and, I hope, that a good deal may be done to supply deficiencies, and to add to our stock of books. I trust also that the close of the year may not again come round, without some progress being made, in what is so seriously required, a new catalogue of our Library &c.

But if we cannot claim that the Members of our Society receive a full and fair equivalent for their contributions, I would suggest to the Members to consider how far this may be due to themselves, as well as to the managing body of the Society, and how far they have it in their own hands to remove this cause of complaint. And first, I would ask the authors of papers to bear in mind the costliness of illustrations, and the tediousness and delay in their preparation; and to reduce these, therefore, to the minimum extent, sufficient for the just elucidation of their arguments, or descriptions. And I would also ask them to diminish, if possible, the demands on the time of our officers, by always submitting with their papers an abstract, embracing the principal points referred to or discussed, and giving a general view of the argument of the writer. No one can prepare such abstracts so effectively as the authors themselves, and this is the only way in which a certainty of nothing being overlooked can be attained.

And to the Members, who are not contributors to our Journal, I would say, that they must be aware that such carefully illustrated publications cannot be issued, without considerable cost. I would appeal to them to save their executive officers, who thus voluntarily devote much time and labour to their service, without any remuneration other than the consciousness of doing their duty, from the harassing and wearying necessities of considering carefully, how every expenditure may

be reduced to a minimum, how this can be cut down, and that left out, or even to decide whether it be possible to publish at all. At the commencement of my tenure of office, it was very seriously discussed, whether it would not be necessary to suspend the publication of your Journal entirely for a time. And you are, gentlemen, indebted to the liberality of your officers for several of the plates which illustrate your publications, during the past year, which the funds of the Society could not have afforded. This is not as it ought to be: and I would throw myself on the feeling of justice and honour of the members, and ask them to prevent a repetition of it. There was at the commencement of the year, a total amount due from different members to the Society, very nearly equal to a whole year's income! Strenuous exertions have been made to call in these sums, but with only very partial success. We have reduced the amount by only about $\frac{1}{6}$ th of the whole. I would ask your aid in this matter. Letter-applications have been made repeatedly to all who are thus indebted to the Society, but believing that such have frequently miscarried, or been overlooked in the pressure of other business, the Council have resolved to print now and send to all the members of the Society, a list of the names and of the amounts due; and we hope that the attention of the members may thus be drawn more effectively to the facts.

Gentlemen, if the Society could now realize the amount due to it from its members, not only would all existing debt be at once removed, but we could add considerably to our actual and permanent income; we could greatly enlarge the Journal, and improve our library, and could thus greatly extend the advantages which we offer to our associates. In connexion with this question of income and expenditure, I may announce to you that, with the hearty co-operation of the Finance Committee of your body, a new system has been introduced of calling in all bills, and discharging them, monthly. You will see in the accounts an item of income derived from the savings thus effected by the payment of cash for work done. But the main advantage resulting from this system is, that the Council know exactly from month to month, how the affairs of the Society stand, and can at once prevent any accumulation of liabilities. The necessity for such a step will be obvious, if I mention that on urgently calling for the immediate submission of all outstanding accounts, several were produced, which

dated even five years back, and which had been allowed to stand over, never having been submitted even though asked for.

It depends, therefore, entirely on the members themselves, how far their advantages as members, can be increased. The Executive of the Society have done what in them lay to promote their interests.

In connection with the question of the publications of the Society, I should fail in my duty did I not make known to the Society, that I have had several, I might say numerous, appeals from members of the Society, to induce a reversion to the old system of publishing all papers, no matter what their subject, in the same number of the Journal, doing away with the division into two series, as now, a change first introduced in 1865 on the motion of Lt. Beavan. On the other hand, other members are equally strenuous in urging the continuance of the present system. I think much may be urged on both sides. And were I content to anticipate only a continuance of the present extremely limited amount of funds at the disposal of the Council, for such publications, I would decidedly urge the abandonment of this division of the Journal. I think we must confess, that the conditions of the case are quite changed since first the Journal was issued. The facilities of communication with Europe and America have been immeasurably extended; Societies have multiplied at home; and there is now, no difficulty whatever for any one to find a fitting medium of publication for any researches he may undertake, the record of which is worthy of being published. A large and special audience is thus at once insured; and delay in making known his results avoided. We cannot now, therefore, look forward to our Journal being, as it has been in past years, the record of the life-long labours of any member. Even the most zealous contributors to its pages find it desirable to send to Societies at home their most valuable papers. And it is consequently difficult to maintain the high character of the Journal, and the fitting publication in two distinct series of the year's contributions. During the year just closed, only two numbers of Part I have been issued; simply because there were no more papers to be printed; while it may, I think, fairly be urged at the same time that the Physical Science papers, in Part II, would have been in no way injured or diminished in value, by the appearance, in the same number, of the oriental papers. The attempt to form two

distinct volumes for each year has failed, because there has not been material enough, or funds enough, to produce two volumes, and each series has, I think, lost in general interest by being isolated. Moreover the Proceedings now absorb all the smaller papers which are of interest, while the issue separately of all these parts, numbers, and volumes adds to the cost.

My own opinion, therefore is, that if we are to have only a continuance of the present state of things, it would be wiser to revert to the old system of publication of all papers in one series, issuing the numbers of that series at regular intervals, of say two months. But if, on the other hand, as I think we are justified in anticipating, we do receive such an accession of strength, as will place the funds at the disposal of the Society, for such publications on a much more satisfactory footing; then, I believe the Council would be able to secure the fitting publication of sufficient material in both series to form two concurrent volumes. In this case, the division would be advantageous. In this matter also, the decision entirely rests with the members of the Society at large. A reference to the accounts of the Society will shew you, that the Council have been fully alive to the importance of improving and enlarging your Journal and Proceedings. They have steadily increased the allotment to such purposes out of the general funds of the Society, so far as was consistent with the other demands on these funds. If you go back only a few years you will see that in 1864, the allotment for publications was only 3,500 Rs.; this was also the amount in 1865; in 1866, this sum was increased to 4,400 Rs.; and in 1867, and 1868, to 5,000 Rs. This is very nearly one-half of the whole income of the Society. -And I would also ask you to remember the fact, that were that income doubled, there would be very little increase in the cost of establishments for management: and that more than a half of that increase would be available for the extension and improvement of your publications. Cannot this be accomplished? Are we to sit down in despair of seeing our finances in a more flourishing state? Are we to be content to see the most valuable papers seek for publication elsewhere, because we are unable to pay for their illustrations here? I would appeal to my fellow members of the Society, and ask them to aid their Council in this respect. I

will not believe that you look upon the efforts of the Society as a mere pastime, that you come here for the idle purpose of passing an hour, or of merely gratifying intellectual curiosity, however laudable such might be. I would rather be convinced that you feel, that by the very act of enrolling yourselves on the list of this, or any other institution for the promotion of science, you accept the position of joint trustees for the great treasury of truth, and are in all honour bound to see that the talents thus committed to your charge receive no diminution, but rather bear fruitful increase, at your hand. If then, each member of the Society, would but induce one single new member to join—and surely it is not assuming too much, that one at least in the acquaintance of every one of us, would take an interest in our pursuits,—I say, if each member of the Society added only one to our lists, and thus doubled our numbers, the difficulties under which we now labour would disappear, the utility of the Society would be largely increased, and the circle of its influence might be still further widened, by reducing the amount of contributions demanded from each of its members.

During the year just closed, the Society at large has unanimously sanctioned the formal transfer of its collections of Natural History, Antiquities, and of miscellaneous objects, to the Trustees of the Indian Museum, incorporated under Act XVII of 1866, to be by them held in trust, for the Society, to form part of a general Museum, freely accessible to all, and to be located in a building specially erected for this object. This building, as the members of the Society are aware, is now in progress. It is situated in the very best locality in Calcutta, facing the large open maidan; it will be large, roomy, and we trust admirably adapted for the purposes for which it has been intended. Pending the completion of this building, the collections still remain in the rooms of the Society, and in a house in an adjoining street, rented to provide the necessary additional accommodation. Full lists of those collections have also been prepared by the zealous exertion of two of our members, Dr. Stoliczka and Mr. V. Ball, who acted as Curators of the Indian Museum during the absence of Dr. John Anderson with the expedition to Yunnan. And the Council are now therefore authorized and prepared finally to

hand over the collections to the trust-charge of the 'Trustees of the Indian Museum.'

This transfer of our collections to an institution, where they are certain to be fully cared for and properly exhibited, is, I believe, the most important change which has affected the Asiatic Society for the last half century. It was not, until after much deliberation, that the Asiatic Society of Bengal ever commenced the formation of a Museum. There were strong and weighty reasons urged against the advisability of that course, derived from the experience of several associations elsewhere. The unavoidable increase in the cost of maintaining such collections was urged; the inability of any limited Society to meet this, or even to provide accommodation for such collections if formed; the terrible waste and destruction of objects of Natural History in this climate; all these difficulties were considered. And in the face of all, it was still determined to commence a Museum. In the wisdom of that determination, under the circumstances, I entirely concur. There was at that time in this city no collection whatever available for the students. Individuals who were interested in special branches of enquiry, had provided themselves, at great cost, with series such as were required for their own immediate researches. But these were, of course, not accessible to the public, or to other students. Now, for the success of this Society, it was absolutely essential that such collections should exist, and most wisely, therefore, did the members devote their energies to the formation of a Museum. For years, unaided by public contributions, steady progress was made. But the truth of the warpings they had received soon made itself manifest. So long since as 1837,—a whole generation since,—it was seriously discussed whether the attempt should not be abandoned. In the following year, it was agreed that either the Museum should be given up, or the publications of the Society. An earnest appeal was then made to the Government of the day for aid. A grant of 200 Rupees per month was sanctioned, and the collections were saved. At various times subsequently the amount of the grant was increased, and effort after effort was made to bring the collections into better order and arrangement. The Society made constant sacrifices to obtain proper means for their exhibition and preservation. But the demands still increased. Mr. Blyth was appointed Curator towards

the end of 1841, and at once the Zoological department of your collections began to assume an importance and value which they had no claim to before. From the time of his appointment, until, in 1862, broken health compelled him to seek a more favourable climate, your Journal bears continuous testimony to the wide range of his knowledge, to the carefulness of his labours, and to the enthusiasm and devotion he brought to his studies. In truth, I know of no series of papers, the contribution of one man, which have tended so largely and so thoroughly to illustrate the fauna of any one country as those of Mr. Blyth do that of India. Mr. Piddington also had for many years contributed largely to our knowledge of the resources of this country, and continued in charge of the Mineralogical and Geological portions of your collections, until in 1856 the establishment of a systematic Geological Survey of the country, and the necessity of providing a depository for its collections, which the Society could not give, led to the founding, in a separate establishment, of the Geological Museum.

But, notwithstanding the liberal contributions of the Government, it was still found that the Museum was a source of constant expenditure, which the limited resources of the Society could not meet, and of constant anxiety. If care were given to one division of the collections, all others were necessarily neglected; no sufficient staff could be maintained; no sufficient space could be afforded. And if additions were made in one direction, they could only be accommodated by the exclusion of some other class. It was not, therefore, surprising to find serious complaints frequently urged of the way in which valuable collections had been treated. In fact, such was inevitable; we had neither the room nor the funds required for the greatly increased collections. After much discussion and careful deliberation, it was determined to appeal to the State, to establish a proper and efficient Museum chiefly illustrative of the Natural History resources of India. Some time elapsed, many difficulties intervened; the disturbed state of the country; the pressing demands on the public revenues for other objects; the changes in the personnel of the Government; all tended to delay the final decision of the question. But the Society was gratified in 1862, by the announcement that "in the opinion " of the Governor-General in Council, the time had arrived when

" the foundation of a Public Museum in Calcutta, which has been generally accepted as a duty of the Government, might be practically realized." There were still many details of arrangement to be gone into; and in 1866, an Act of the Indian Legislature was passed, providing for the erection of a proper building, and formally sanctioning terms on which the Asiatic Society of Bengal should be prepared to hand over to a Board of Trustees their collections, to be held in trust for the Society. To the Society was also secured the right of nominating, through its Council, four out of the whole number of Trustees (13) and certain other privileges were also granted. The vote of the Society at large, taken in November last, confirmed the proposed transfer of the collections, which can now, therefore, be formally carried out.

I cannot but congratulate the Society most heartily on this highly satisfactory termination of a long standing, and ever-increasing, difficulty. They have secured the maintenance of a well-arranged and extensive Museum in Calcutta; they have obtained a public and legislative guarantee for the support of this; they have secured a continuance of their interest in such collections, so that there is little fear that the objects which the Society originally had in making these collections shall be forgotten or neglected; or if they are neglected, it will be the fault of the Society itself; and by doing this, they have relieved the Society from a heavy and increasing demand on its pecuniary resources. On the other hand, I think we must all gladly acknowledge the obligations of the Society towards the Government of this country, for the liberal support they have given to such objects, and for the gracious and ready acknowledgment which their doing so has expressed of the unflinching exertions which the Asiatic Society of Bengal, through good report and evil report, in times of plenty as in times of difficulty, had, through the long lapse of half a century, devoted to what they justly considered a necessary and essential element in the satisfactory investigation of the history of this country, and of its resources.

There still remains another important change, contemplated in the arrangements to which I have just alluded, which must be sanctioned by the Society at large, before they can be terminated. That is, the proposal that the Society should leave its present premises, and take up

its abode in rooms to be set apart for it in the general building devoted to the Indian Museum. Under this proposal, the Society is to retain its property in the present house :— another and a very marked instance of the liberal view which the Government of the country have taken of the labours of the Society. There can be no question, that immediate advantage in a pecuniary point of view would result to the Society from such a move, as we should, in addition to our income from subscriptions, receive whatever rent would be realized for the house we now occupy. And yet I confess that, individually, I look forward to such a move, if carried out, with anticipations of nothing but mischief. The house we now meet in has been the abode of the Asiatic Society since long before any of its present members can remember. All our memories, all our associations, are with it. It has afforded accommodation to the Society for two generations and more. If the Museum be removed, which now occupies more than three-fourths of the whole house, there will be ample, and more than ample, accommodation for the Society's property, and for any extension of its Library which can be contemplated or accomplished for the next century. We would therefore abandon at much cost and risk to our books, maps, paintings, &c. in removal, a house most admirably situated, and in which we have had a long, successful, and independent existence, in order to take up our abode in rooms which, necessarily designed as a part of a building intended for a general Museum, are not, and cannot be so well adapted for the purposes of a Society like ours, as our present rooms are. By doing so, we would I think, cease to have that independence of existence, which is so desirable. We would become but the smallest and least influential part of a great whole, and I cannot but consider it a certainty that in the unavoidable extension of the Museum, and of its demands for space, the Asiatic Society would simply be screwed out again, and be compelled to return to its present abode, or seek a domicile elsewhere ; or what is just as likely, would be absorbed in the general extension.

I have always felt, and I know that this feeling is shared by other members of the Society also, that if once the Society comes to occupy rooms forming a small portion of a large public building, the natural consequence will be a conviction that it also has become a part of a Government establishment, and is supported by Government. And the result

of this will be, a large withdrawal of support from individuals. Indeed, I found it very difficult to persuade a member of the Society the other day that this was not the case *now*, and to induce him to continue his contributions. I confess I anticipate this result with some dread, and I would seek to avert the evil. The case would be different if the proposition were to construct a separate abode for the Asiatic Society, which could be specially adapted to their wants. But this is not the case : the proposition is, that the Society should take up its abode in a corner of a great building designed for other purposes, in rooms that beyond a question will soon be needed for other purposes. I venture to think, that the Society would be vastly more benefited if a pecuniary equivalent for the proposed rooms were secured to them, and they continued in their present abode. There is, however, ample time for the consideration of this question, as the move cannot be made for some years yet.

You will, gentlemen, have heard with regret of the loss of seven of our members during the past twelve months by death. Of those seven, one only, Mr. Foster Hill, had been a contributor to our meetings. Mr. Hill joined the Society soon after his arrival in this country to take up the important duties of Professor of Civil Engineering in Calcutta, and we looked forward with much hope to his increasing interest in our common pursuits. Of the others, whose decease has been announced to you, some had filled prominent positions, as citizens and rulers in the land, with high honour and credit ; one especially, Prosonno Coomar Thakur, we would name as having long and earnestly shewn his appreciation of the value of knowledge by actively engaging "in the holy cause of enlightening his countrymen ;" but this is scarcely the place to consider their history in such a light. As members of the Asiatic Society, they had not been contributors to our Journal, but they had for many years proved by their constant membership, that they appreciated the importance of science, and were impressed with a sense of that duty which devolves on the wealthy to maintain and support, by their wealth and by the sanction which their names and public station give, those means of co-operation, by which the progress of the real labourers in science is facilitated. In this they had offered an example worthy of imitation to a wider extent than it has hitherto claimed.

There are hundreds who from various causes, can assist and support science in no other way than by their purse; but I would urge that this aid is a duty; a duty, even enhanced by self-interest, which will certainly not lose its reward. How forcibly and yet how quaintly Bacon says "Knowledge is not a couch for the curious spirit, nor a terrace for the wandering, nor a tower of state for the proud mind, nor a vantage ground for the haughty, nor a shop for profit and sale, but a storehouse for the glory of God, and the endowment of mankind." I know that the standard of mental culture among the educated classes in this country, whether European or Native, is too high, to allow me for a moment to think that they are insensible to these claims of science on their support. I would rather suppose that these claims have not as yet forced themselves on their notice. I would not degrade knowledge by making it "a shop for profit and sale," in asking the consideration of the individual gains to be acquired by its patronage, but I would recall to you, that science has ever been the most powerful minister of national power, the most effective guide to national wealth, "the true handmaid of religion, the one manifesting the will the other the power of God," and I would urge that the neglect to encourage and sustain this, and such other kindred institutions, is the neglect of a duty which we owe to ourselves, to our successors, to our country. It is mainly, gentlemen, by the combined efforts of such Societies, by the co-operation of their members, by the increased interest which attaches to common studies pursued with a common object, by the minor intellectual contests which arise from the challenge of mind to mind in the working of such institutions, that the soldiers of science are trained in the use of their weapons, and enabled to go forth, clad in the panoply of scientific truth, as loyal knights to do battle with the terrors of superstition and to scatter the hosts of ignorance.

We have all, gentlemen, other and more pressing claims on our time; other and onerous duties to perform. Rarely indeed has it happened, that science has been able to obtain the undivided attention and time of any of her cultivators, but we can contribute, each according to his own ability. There is not one, if he be only willing and humble enough to attempt it in the right spirit,—letting his "mind, like a pure mirror, reflect nature without distortion"—who cannot

add something to the pile of knowledge; who cannot pick up a branch here and there; a dry twig from the trees around. Others perhaps will tie these into faggots, and add them to the pile (and the lowest menials in the service of science can aid in this) and at last some other devout worshipper will come, and touching the heap with a spark of Promethean fire, will call forth all the secret light and heat it contains, to illumine the temple of knowledge. It is only thus by the useful combination of many, that true progress is obtained, and even had our Society not existed, we should have been compelled in other ways to unite the efforts of many, before we could arrive at the solution of our problems.

It was, gentlemen, with convictions of this kind, that extended education, and the general diffusion of science, more especially as applied to the industrial arts, were among the most effective means by which the social condition of this country could be improved; that by encouraging the cultivation of the natural or inductive sciences, it was possible to exalt the tastes of the educated youth of this land; that I was led to consider how far it might not be possible for this Society, through its Council, to aid in facilitating the attainment of this desirable end. In the valuable address delivered from this chair, at the close of the previous year, your President, Dr. Fayerer, remarked on the serious discouragement with which these studies had been met in this country. He truly said: "If ever we propose to educate the people thoroughly, to lead them from lower to higher truths, it can only be by making them acquainted with the subjects included under the comprehensive term of 'Physical Science' * * * by imbuing them with a comprehension of those general laws by which all physical phenomena are regulated." He went on to say, "It is not here, though, that the elementary knowledge could be imparted, but in the schools where the youthful mind is trained to observation and comprehension of laws, the results of whose operations are recorded and verified here." Entirely agreeing as I did in these views and in the opinion that this was a subject worthy of the consideration of the Society, I lost no time, on taking your chair, in urging the Council to aid in this good cause. I am happy to say, the proposition met with their earnest support. A committee was selected, and entrusted with

the discussion of the best means of bringing the matter to the favorable consideration of the authorities who would have to carry out any proposed changes; and also to consider what, and how great, those changes should be, in order to ensure the successful attainment of the object. The question was fully discussed, and it was decided to address His Excellency the Governor-General, in the matter. As Patron of this Society, and at the same time Chancellor of the University of Calcutta, we felt confident of the interest which His Excellency would take in the question. And, as to the means which appeared to us the best adapted to accomplish the end in view, we were quite agreed, that any change must be gradually introduced, since the agency by which these subjects could be taught must in this country be to a large extent created, before there could be any very large extension of such studies. And seeing, not only in this country but in Great Britain, that the Universities were the great object of ambition with all the better class of students, and that the curriculum of studies in the vast majority of Schools was almost entirely regulated by a reference to the University standards,—even when the large majority of the school pupils never intended to proceed to the higher grade of an University training,—we have urged the very simple addition of an elementary knowledge of Natural or Physical Science to the course required from every candidate for matriculation in the University of Calcutta. We were satisfied that if this were demanded, and rendered obligatory with the pupils, the information would be acquired; that the earlier students would soon become themselves better qualified to teach others; and that thus gradually, but most surely, a large amount of knowledge would be disseminated, the good effects of which we did not venture to doubt. In this spirit, we addressed His Excellency, and we have since been informed, that His Excellency has laid the question officially before his Council, where, we doubt not, it will receive full and just consideration.

I conceive that this has been a most legitimate exercise of the influence which the Asiatic Society ought to possess; and I trust the effect may be as beneficial as we anticipate. And indirectly, I trust also, it may be of essential advantage to the Society itself, in bringing into our ranks, a large number of new recruits, ready to take up arms in the cause of truth. But let us not forget at the same time

that while we urge upon others the necessity of such extended education,—if our youth are to be trained up as useful citizens and men,—let us not forget, I say, that our Society itself forms the necessary complement to this early training, let us view ourselves even more than we have been wont to do as an educational body, and as devoted as much to the improvement of others as to the advancement of our own information. Let us all be fellow-labourers in the great search after truth, fellow-pupils in the school of nature, fellow-students of that “great first book—the world,”—all I trust ready and anxious to communicate to others any knowledge we may ourselves possess; ready and anxious also to learn from others all that they can communicate. And by no means the least advantage arising from such studies consists in the inevitable result which habits of observation must produce, namely, that they call into existence, and provoke the exercise of, a process of self-education, without which no man is well-taught. True that in every physical science, where the great means of acquiring knowledge is by observation, much must be accepted on the authority of others,—unless we would have the human mind remain stationary, and allow the accumulated stores of one generation of men to be lost to another,—still each must for himself go over these observations, must trace the successive steps in the reasoning based upon them, and must, if he wish to apply them, stamp those reasonings with the impress of his own individuality; each must observe, each must compare, each must discover, for himself. Material forms and arrangements must be seen to be understood clearly, and the students are thus forced to consult the great book of the world itself, if they desire their information to be accurate; they are compelled to be the “children of nature and not her grandchildren.” And if such habits of observation and comparison ever be produced, we may rest assured that they will continue to be exercised. The great secrets of nature are not proclaimed in the market-place; they are not open to all, but are hidden in her inmost sanctuary, and if we would be honoured by her confidence, we must devote ourselves to her service. New methods of enquiry, new modes of research are called into play. The questions to be solved here, are not of our own imagination, they are ready prepared to our hands. We cannot here start from our own suppositions, and laying down

definitions, demonstrate identities as determined from a reference to such definitions. We must compare, we must determine resemblances by a reference to type and establish similarity in effects by their analogy with known results of known causes. And this practice of reasoning from analogy, this necessity for estimating degrees of probability, and for balancing varying amounts of evidence, and the habits of thought thus educated, constitute one of the marked advantages of the Natural Sciences as part of a system of education. They thus fill a blank by calling into active and continuous operation habits of thought, and by educating powers of mind, which neither the study of literature nor of the mathematical or social sciences sufficiently exercise.

We have had during the year the pleasure of welcoming back from Abyssinia our able associate, Mr. William Blanford, who had been attached as Geologist and Naturalist to the force engaged in that country, for the release of the prisoners confined there. During the progress of his interesting trip, the Society had received several communications giving brief accounts of his progress, which were full of interest, and at the last meeting (Dec.) Mr. Blanford completed these sketches up to the date of his return. At the same meeting, a considerable part of the valuable collections which he had brought back with him, illustrative of the Natural History and Geology of Abyssinia, was placed on the table, and bore ample testimony to the energy and enthusiasm which he had brought to bear on his enquiries. Since his return, Mr. Blanford has been engaged in the more careful examination of his collections, and in the preparation of his detailed reports. I sincerely hope that these may be, under the sanction of the Government of India, given to the public in a fitting form, with ample illustrations. It is true that the Natural History of Abyssinia has been perhaps better worked out, than that of any other equally un-frequented part of the African Continent, and that in consequence, the number of novelties brought back by Mr. Blanford has not been very large. But he has been fortunate in meeting several and in obtaining specimens also, which throw additional light on the structure and history of other animals the existence of which was known, but not with sufficient accuracy. Further, although many papers of high importance have been published in other languages treating of the Natural

History of Abyssinia, there is scarcely a single one in English, and certainly there never has been any attempt to give a general statement of the facts in our language. I feel also that the publication of such researches, under the editorship of the original observer himself, would be an object worthy of the patronage of a great Government like that of this country, and would be a fitting supplement to the enlightened interest which they have already displayed in, and the liberal sanction they have already afforded to, such scientific enquiries in the country they were compelled to enter. We look forward with great interest to Mr. Blanford's detailed reports, knowing how well prepared he was for the investigations he has been engaged in, by his long and eager study of the Natural History, and his intimate acquaintance with the Geology, of India. It was to me a great pleasure to urge the special fitness of my esteemed and able colleague for such a duty when at home last year, and I have no hesitation in expressing my conviction that the importance of the results will fully justify these anticipations. Of course, the extent of Mr. Blanford's acquisitions must be considered with reference to the very brief duration of his visit, and the necessity, under the peculiar circumstances, of his confining his researches to the immediate neighbourhood of the line of march of the force which he accompanied.

Another of our members, Dr. John Anderson, had been despatched with the expedition from British Burmah to Yunan, and also returned towards the close of the year. We have not yet had any detail of Dr. Anderson's observations in those little known countries, but the very valuable and beautiful series of costumes, weapons, implements, musical instruments, &c., portions of which are still hanging in this room, and which have been all open to the inspection of the public for days past, shewed what a rich harvest he had gathered, bearing on the history, habits and relations of the curious tribes among which he had been. The collection is also singularly suggestive of connection between these tribes and others. At the meeting in June last, some Panthay visitors were present, and a sketch of the history of this strange people,—an island of Mussulmans in the centre of a raging ocean of Chinese, which had withstood all the attacks made upon them, and had not only held out against their threatened destruction, but were yearly gaining in numbers, importance, and strength,—was

given by Maulvi Abdullatif; drawn up from a MS. in Arabic by one of the Panthays themselves. We anticipate a large addition to our knowledge of these people, and of their border tribes, from the account of Dr. Anderson's sojourn among them, and hope it may be soon accessible to the members of the Society and the public.

The second part of the Journal for 1868, contains the usual meteorological returns for Calcutta up to close of August. The 1st number for 1869, now on the table, brings these up to the close of October. These had been allowed to get so much into arrear that, at the close of the preceding year, they had been issued only up to August, 1866. It is hoped that we shall in future be able to give these returns more quickly than hitherto; and that very soon the necessity for publishing them at all may be removed, by the issue in a more complete and general form, of tables exhibiting the chief meteorological elements, not only for Calcutta, but for Bengal generally, from the office of the meteorological reporter. We have seen, with pleasure, that the Government of Bengal has acted on the advice of their able officer, and enabled him, by visiting the out-stations, and personally conferring with the several observers, testing and comparing their instruments, and the modes of registration, to introduce a greater uniformity in the system, and thus obtain a greater regularity in the returns. This is the essential first step towards improvement, and we doubt not will bear good fruit; for, however interesting to local observers local observations may be, they fail entirely in leading up to any general results, unless they can be correlated with other observations in adjoining or more distant localities; and this correlation and comparison is worse than useless, unless the observations have been in each case conducted with nearly equal care, and on a uniform system. This element of success will now be secured for Bengal, by Mr. H. Blanford's visits to the Bengal stations. Similar efforts have been made in the N. W. Provinces, and we look forward to the adoption of a uniform system, throughout India generally, when it may be practicable to deduce from all the returns one general review of the meteorology of India. I would suggest that useful progress towards the accomplishment of this desirable end might be made, if monthly summaries

prepared by the officers charged with the record of these observations under each of the local Governments, were to be published together each month. The observations are now published in detail from week to week, but I think the information they afford, might, with great advantage, be summarized each successive month.

The great value, commercially, of these returns have been acknowledged during the year, by the application from Commercial bodies, for the publication of information regarding rain-fall, &c., in the Upper Provinces. And I cannot help thinking that more practical benefit would be derived from the issue of a brief summary of results each month, and indeed, I would hope, each week, than from the publication of a long list of detailed numerical results, which few persons ever look at; I would also gladly see a combination of the several returns now given. In Calcutta we have weekly publications of the results obtained at the Surveyor-General's Office, as well as those compiled in the office of the meteorological reporters to Government. Now, neither of these are complete in themselves. The establishment maintained at either office is insufficient to secure full and satisfactory results. And we would hope that arrangements may be made to combine both, and to form one really satisfactory, and thoroughly efficient, meteorological observatory. Hitherto no observations whatever have been made of the electrical elements, and their disturbances; none of the seismic phenomena, the importance of which in a general physical study of the country, we have been so recently reminded of,—no satisfactory photometric observations have been made, and—of still higher interest and importance practically—no trustworthy observations of the amount and distribution of evaporation.

I have no doubt all these important questions will receive due attention in time. And I am confident that the Asiatic Society, which has now for nearly quarter of a century steadily, and at great cost to itself, given to the public continuous returns of the meteorological results obtained in Calcutta, will rejoice to see such observations extended, systematized, and compared, with an amount of detail and care, commensurate with the importance of a knowledge of the atmospheric forces and their changes in direction or amount.

And here I would express our grateful sense of the manifold assis-

tance we receive from the Surveyor General's office. To Colonel Thuillier and Colonel Gastrell we are indebted for a continuance of the hearty and friendly aid they have invariably afforded to the Society, not only by their personal support, but also by the liberality with which they have aided the Society in bringing out the many illustrations which accompany the volumes of your Journal, and which, without this aid, it would have been impossible for your Council to publish.

I am happy to be able to announce to the Society that the various papers on the Ethnology of Bengal, which the Government have requested Col. Dalton to edit, together with his own report on the tribes among which he has so long laboured, and with whom he is so well acquainted, have now attained such progress towards completion, as justifies their being at once sent to press; and we may hope for greater progress being made during the coming year, towards their completion. Dr. Simpson has also completed the series of photographs of those tribes, which he had not before had an opportunity of picturing. The history of the native races in other parts of this vast empire has also attracted much attention, and the Society has received from various districts, valuable reports on the inhabitants, their history, languages, customs, &c. I would also here acknowledge the impetus which has been given to such studies by the publication during the year of Mr. Hunter's valued contributions to the study of the Non-Aryan races of India. These commend themselves alike to those who would desire to study the history of these people, with a view to trace out the curious and intricate relationship established by a study of their languages, and the evolution of these in successive ages—and to those who may be placed in positions of authority, and have to deal with these 'lapsed peoples' in their political and social relations. I am confident that no one is more thoroughly convinced of the fact, that these researches have not yet, and indeed could not as yet, have attained to any completeness or perfection than the accomplished author himself. But if in nothing else, then the greater facility which such a work as his Dictionary affords for seeing the errors, and, by eliminating these, making a still further advance towards truth—if in nothing else than this, every student of these Non-Aryan people—(and who that has taken the slightest interest in the ethnological history of

India, has not been to some extent a student of these tribes,)—must feel largely indebted to Mr. Hunter. We look forward with great interest to the promised comparative grammar of these tongues, and trust the author may be enabled to carry out his intentions satisfactorily and quickly.

From the study of the races still existing in the less frequented districts of this country, or of which the last dying embers are still smouldering on the hill sides, the transition is easy to those Palaeo-ethnologic enquiries which bear on that question of surpassing interest, the antiquity of man. I have recently published in the Records of the Geological Survey of India careful drawings of the agate flake or knife, found in the deposits of the upper Godavery, of the discovery of which I made the first announcement to this Society in 1865 (Dec.) and then briefly alluded to this great importance of the discovery. During the year, various additions have been made to our knowledge of the limits of area, over which these records of the stone age have been found. I would ask those who are interested in this investigation to compare the series which Dr. J. Anderson has brought back from China. And we have had the gratification of making known also the first instance of the occurrence in India of evidence of the use by early races of copper in the manufacture of implements of the same general character, as mark the use of this metal in other countries also. Some of these implements procured by Mr. Bassett Colvin near Mynpoorie have been proved to be of pure copper. But, as is generally the case in such enquiries, the announcement of this discovery (supposed to be unique) has led to the knowledge that others have been found elsewhere also. And possibly we shall before long have abundant evidence that, in India, as elsewhere, a certain law of successive development in the use and manufacture of metals has obtained. The very remarkable and very interesting discoveries in Coorg, of which your proceedings contain the record, and of which further details have since been received, cannot fail to prove of high interest, and to excite to similar research elsewhere. These, however, come down to a time, when we tread on the verge of historic records. I would more eagerly seek for the co-operation of many through the country in the search for proof of the existence of man in earlier times. And I would venture to give here, a very brief and

hasty sketch of the reasons which lead geologists to anticipate such discoveries.

I need scarcely detain you by recounting the several steps in the discoveries, which though commenced nearly forty years since, have only within the last ten or so, led to the general acceptance, as a fact, of the existence of man along with numerous animals which have since become extinct ; nor of the various ages which different authors have assigned to these instances. Four divisions have been tolerably well ascertained in Europe. 1. The ante-glacial epoch, or, as Lartet calls it, the epoch of the cave-bear ; 2nd the glacial epoch, or that of the Mammuth and Rhinoceros ; 3rd the post-glacial, or that of the reindeer ; and 4th, the actual, or that of the Aurochs. Now, you will perceive that this very simple enumeration of the principal animal remains, found contemporary with the evidence of man in these successive epochs, combines with the physical evidence, as indicated by the other names of glacial, post-glacial, &c., to shew, that enormous physical changes, bringing with them equally marked organic changes, had occurred over the surface of Europe, even in these very recent (geologically) periods. Still greater alterations both of surface and climate, and of the animals existing at the time had occurred in the periods immediately preceding those to which I have just referred. And the Miocene (Mammalian) fauna of Europe differs in almost every species from those which succeeded it. These tremendous physical changes brought about such changes in climate, &c., that the Miocene animals were succeeded by others fitted to live in a temperate climate, and these again by others who had to endure the intense severity of an Arctic winter, during the so-called glacial period. But if we now look to the history of later geological periods in India, we find no evidence of these great climatal changes, (so far as the greater portion of this immense empire is concerned). True, there is abundant evidence in the great ranges of the Himalayas to shew the former extension of the glaciers of those hills. But I am not aware of the existence of any such evidence beyond the hills ; certainly, I think, none which would prove any great lowering of temperature over a wide area. And coincident with this absence of change in physical conditions, we find an equally marked absence of change in the fauna. We have in India none of those very strongly marked divisions which exist in the successive faunæ of Europe.

Thus it happens, as first shadowed out by Falconer, that we find living at the present day the actual and unchanged descendants of several of those animals, the remains of which Falconer and Cautley found buried under some thousands of feet of the Sivalik deposits. And the evidence of the continuity of this descent is afforded by the deposits newer than the Sivaliks. The common Gharial left its bones on the mudbanks of the Sivalik period, just as it now basks on the muddy banks of our existing rivers. The little *Emys (Pangshura) tectum* lived then as now. Elephants then, as now, roamed though the Sivalik forests. True horses (*Equus*) existed; the Camel and Giraffe, cotemporaries of man at the present time, may have been his cotemporaries then also, while true oxen and buffaloes abounded also. The monkeys of that time can scarcely be distinguished from the Honumans which still chatter in our forests. We have therefore abundant evidence that, in India, the existing order of things has dated from a very remote period, and that all the conditions of those early times were suited to the requirements of man. Many of the animals have since then lived down to the period of man, and some exist now. Why then is not the reverse, or reciprocal, way of putting the statement equally admissible, that man had lived back to this early period?

In this peculiar relationship of continuity between the newer deposits of the Godavry and Nerbudda, and the older beds of the Sivaliks, consists one of the marked points of interest attaching to the discovery of evidence of man in any one part of the series. There is no sudden or marked break traceable in the Mammalian fauna which inhabited those countries at the successive periods, why should there be any break in the period through which man was a cotemporary of these animals?

In some very interesting and very important remarks made by my valued colleague, Mr. Wm. Blanford, last year, when the history of the stone implements found in various parts of India was before the Society, he pointed out very briefly how, even up to the present day, the fauna of India presents a remarkable mixture of African and Malay forms; and how the fauna of the Nerbudda gravels, so far as known, appeared "to have been either purely Western, (African and European) in its affinities or to have been much more nearly allied

to the Western fauna than is that now existing." Mr. Blanford also argued very justly, that the case which he instanced in the Nerbudda fauna of the complete substitution of one animal for another of distinct affinities, indicated that a larger lapse of time had intervened since the deposition of the Nerbudda beds than had taken place in Europe since the formation of those pleistocene beds in which the oldest remains of man yet discovered have been found; "and since which no such case of substitution was known." The reasoning appears to be perfectly correct, inasmuch as we have no evidence of a great change of climate since that early period. But I venture to think that Mr. Blanford has not stated the whole truth. And I believe he would agree with me in thinking that this intimate connection with the fauna of Europe and Africa to which he alludes, as regards the comparatively recent beds of the Nerbudda, can be traced with perfect certainty back to the very base of the Sivaliks, and that the mammalian fauna of India (West and North-West) was one and the same with the fauna of Europe and Africa during the miocene period. We have as yet no evidence to decide the question whether the same animals wandered over the same area at the same time; which, however, is a totally different question. And there were also, and of course, geographical differences in the animals then, precisely as there are now. But the discoveries of Gaudy in Greece some six years since shewed at once that the miocene fauna of Pikermi differed not more from the Sivalik fauna of India on the one hand, than it did from the true miocene of Germany and North Europe on the other. Mastodon, Hipparion, Hyænodon, Musk-deer (*Dremotherium*), Giraffe, and Satyroid apes, all form units in the evidence which indissolubly connects the upper miocene of Europe with those of the Sivalik Hills. And when examined with a little more detail in comparison, we find that the living species which come nearest to the fossil species found in these rich deposits of Pikermi and elsewhere in Greece, the ~~spotted~~ Hyæna, the two-horned Rhinoceros, the Zebra, the Giraffe, and several antelopes are peculiarly African. Further, Unger found among the vegetable remains which occur in numbers close by in Eubœa (and on the same geological horizon) more than 40 per cent. most nearly allied to forms now living in Southern Africa.

We have already alluded to the absence in India of any of those

great physical changes accompanied by marked organic differences subsequently to this Upper Miocene period. And to this cause is due the fact to which Mr. Blanford so justly drew attention, that the fauna of the Nerbudda valley-beds, has a nearer alliance with the Western or Afro-European fauna, than has that now existing in the Nerbudda district. The two faunæ were in fact one in earlier times, and the divergence since then has been most gradual and is still in progress.

Gentlemen, I allude to these researches not so much for the object of exciting attention to the very startling and very important facts which these truths contain, but rather to point out how essential it is that in such enquiries we should be convinced, that the only true solution to be sought for in such problems, is to be obtained from a careful study of the existing animals in each country, and then of the relations which the extinct forms bore to them. I have purposely endeavoured to avoid as much as possible the use of terms derived from European geology, save when speaking of European results, because I feel convinced that the basis of the classification which has hitherto been adopted for these geologically recent deposits in India, has been erroneous. To appeal to Europe for evidence of the geological age of our Indian deposits, is to appeal to witnesses who cannot know the facts, and must therefore give irrelevant or false evidence. Would an Australian geologist be justified in admitting his cave deposits to be secondary, because in Europe marsupial animals were found in secondary rocks; reversing the question, would an European geologist declare the deposits which hold these marsupial remains to be of recent age, because marsupial animals now existed in Australia? The only key to a knowledge of the true succession of Indian rocks is to be found in India, and too much caution cannot be insisted on, in attempting to adapt to this country laws of distribution of animal life derived from the investigation of other and distant lands.

As Falconer eloquently pointed out long since, it is in India, if anywhere, that we must hope to solve the great problem of the succession of life. Here, if anywhere, shall we find in these ancient alluvia of marvellous extent, some of those intermediate forms, all but totally wanting in Europe.

The year just closed, has witnessed very signal proof of the hearty desire of the Government of this country to disseminate an intelligent knowledge of its history and literature. At a cost, which to some few may appear enormous, but which is in reality scarcely commensurate with the vast interest of the enquiry, sanction has been given to the examination and actual repetition by exact and full-sized models of parts of the more interesting architectural remains of the country. For some time past, the Government of the Upper Provinces have been from year to year, at considerable cost, doing much for the preservation and renewal of the many glorious remains, which give such a magic interest to the great cities of those provinces. What student of the architecture of former dynasties, (and in what way can the genius of any distinct race be more satisfactorily studied than in its architectural remains) has recently visited Delhi or Agra, and has not felt grateful for the enlightened spirit in which the magnificence of their buildings has been preserved and renewed, unsightly obstructions removed, and the grandeur and gigantic nobleness of conception which mark these erections made patent to every visitor. And now the Government of India have gone further, and while carefully preserving these noble monuments of former civilization, have determined that their most striking beauties shall be repeated in Europe, for the admiration of every one who can admire gracefulness of outline, massiveness of design, and wondrous skill in execution. In addition to this, skilled enquirers have been deputed to investigate, measure, and describe, some of the more ancient and less known remains in various districts. Our own active member, Rajendralála Mitra, has but recently returned from Orissa, with a large mass of detailed information on the curious remains in that district, which we trust he will be enabled to make public soon. With great regret, we know that his visit to those malarious jungles has resulted in a very serious illness, which has prevented his being present among us this evening.

Lient. Cole, R. E., who is also one of our members, has in a similar way been engaged in the examination of the highly interesting architectural remains of Cashmere. And we look with great interest for a more detailed and careful description of these very curious buildings from his pen. So curious and so different are they from any other type, that Cunningham classed them as belonging to a

new order of architecture to which he gave the name of *Aryan*. This, however, has, by nearly general consent, given place to the term 'Cashmere' order or style, as the former name conveyed an idea that the builders of these temples were of an *Aryan* race. I would hope that Mr. Cole's researches may be extended to the Punjab, where remains, in many respects similar to the Cashmere temples, are to be found, but with very distinctive peculiarities. During a brief visit to the Salt range in 1864, I had an opportunity of seeing several of these, and of making sketches of them. And I felt satisfied that they had been too hastily referred to the same type as the Cashmere buildings. With many things in common, they differ entirely in the character of the roof, which here assumes the form of a square truncated pyramid, with bulging or curved sides; a form which, I should think, indicates a distinct transition to the true Jaina forms. But we require much more detailed examination, before pronouncing definitely on the facts.

I would also refer to the most interesting and valuable papers of Mr. Ferguson on the tope of Umrawutti, near Bezwara in the Madras Presidency, as an evidence of the great interest which Indian architectural remains are now exciting. Some few specimens from this very wonderful Buddhist erection are in the Society's collection, and the members can judge for themselves of the marvellous detail and beauty of the sculpture which adorned its walls.

More recently, the Government of India have, with great liberality, taken steps to secure the possession of a complete list, and also of as complete a library of Sanskrit works, existing at the present moment in India, as may be practicable. The Government have referred to your Society for advice and aid in this very important step, and the matter is now under the consideration of the Philological Committee. The Society cannot fail also to feel gratified at the entirely unsolicited acknowledgment of their long continued efforts to promote a knowledge of Oriental literature, which the resolution of the Governor-General in Council to place at the disposal of the Society, in furtherance of the publication of Sanskrit works of importance a sum of Rs. 3,000 per annum, in addition to the Oriental Publication Fund, already in the management of the Society, conveys. There is, I regret to say, a considerable difficulty in obtaining the aid of properly quali-

fied Sanskrit scholars to carry Sanskrit works through the press, and it would seem that the resolution to catalogue, and bring together a complete series of Sanskrit literature, has by no means been taken up too soon.

I would hope that, on completion of the proposed Catalogues of Sanskrit works, a similar step may be adopted with reference to the numerous Persian and Arabic works which exist scattered in the libraries of native Princes and gentlemen throughout the country.

In connection with Oriental studies, it is a source of gratification to hear from Bábú Rajendralála Mitra, who has acted as Secretary to the Fund, that from scholars in India, who appreciated the value of Bopp's contributions to comparative grammar, a very considerable sum has been remitted in aid of the Bopp Commemorative Fund.

I cannot conclude without expressing to you the obligations under which, in common with every member of the Society, I feel myself to your executive officers and Council. When we first came together, and had, with much anxiety, obtained a full knowledge of the heavy amount of liabilities that were hanging over the Society, it was seriously debated whether it would not be necessary to cease for a time the publication of your Journal, and thus, in fact, give up the only evidence we do offer to the outside world of our useful existence. Ruinous as we felt that this would be, we thought honesty demanded that our debts should be paid. If this misfortune has not fallen upon the Society,—if instead of ceasing to issue your Journal, we have been enabled to make the volume for the past year larger, and to bring it before you more punctually than in former years, you owe your thanks for this gratifying result to the devotion of your Secretaries; and above all, to the care with which the Finance Committee of your Council have guarded your resources. To Col. Gastrell, as your Treasurer, and to Dr. Partridge as a member of that Committee, we all owe a very hearty expression of our thanks for the assiduity and caution with which they watched over your interests. To the Council at large, I must be allowed to express my own thanks for the kindly support they have accorded to myself during the term of my office.

Allow me now to express my lasting obligation for the unmerited honour you conferred on myself by placing me in your chair. I am

painfully conscious of how inadequately I have been able to fulfil the duties of the important office of President. Of one half of the discussions brought before you, those bearing on Oriental literature, I most candidly confess my entire ignorance. And I cannot but think that the selection of some other, more permanently resident in Calcutta, and less harassed by pressing claims upon his time from other work than I am, would have been more beneficial to the Society's welfare. I can, however, assure you that none can be more truly desirous of the well-being of the Society, none more sincerely and thoroughly convinced that your success is interwoven with the progress of Science and truth in this country: and limited as has been the range of my own labours and little as I know, I have endeavoured to show, at least, that I do know the value of knowledge, and would desire to foster and aid in the acquisition of it. For the kindness with which my efforts have been received, I feel greatly indebted to the members of the Society. I trust our meetings may ever be distinguished by freedom of discussion and freedom of intercourse, by an unflinching expression of opinion, and an equally unflinching kindness of feeling towards those with whom we may differ. If in aught I have done well, so far I have done according to my wish. And I thank you for the additional proof you have this evening given, that my willingness and desire to promote your interests are not doubted, however I may have failed in my ability to accomplish that desire.

Ordinary Meeting.

The meeting then resolved into an ordinary monthly meeting.

Th. Oldham, Esq., LL. D., in the chair.

The minutes of the last meeting were read and confirmed.

The receipt of the following presentations was announced—

1. From Bábú Rajendralála Mitra, specimens of shells collected on the sea shore near Puri.

2. From Dr. Shekleton, a copy of Assay Tables of Indian and other coins.

3. From Baden Powell, Esq., a copy of Report on Panjab Products, Vol. I.

4. From the Superintendent G. T. Survey, two copies of Report on the operations of the Survey Department for 1867-68.

The following gentlemen duly proposed and seconded at the last meeting were elected ordinary members.

Dr. P. F. Bellew.

A. Cadell, Esq., C. S.

C. C. Adley, Esq.

The following gentlemen were announced as candidates for ballot at the next meeting of the Society.

Major Ross, proposed by Dr. J. Anderson, seconded by H. Blochmann, Esq.

The Rev. J. P. Ashton, proposed by Rev. J. Long, seconded by Dr. J. Anderson.

Thakur Giriprasad Sing, proposed by H. Blochmann, Esq., seconded by Dr. Stoliczka.

Fred. Drew, Esq., Jummoo, proposed by Dr. T. Oldham, seconded by Dr. F. Stoliczka.

Louis Schwendler, Esq., proposed by F. Schiller, Esq., seconded by Dr. F. Stoliczka.

J. Pickford, Esq., proposed by Bábú R. Mitra, seconded by Dr. T. Oldham.

Sirdar Attar Sing, Chief of Bhaddour, proposed by E. C. Bayley, Esq., seconded by Bábú R. Mitra.

T. Thomas, Esq., Barrister-at-law, Lucknow, proposed by H. Blochmann, Esq., seconded by Dr. F. Stoliczka.

Dr. Baxter, proposed by W. Swinhoe, Esq., seconded by Dr. Stoliczka.

Bábu Protapa Chundra Ghose, proposed by H. Blochmann, Esq., seconded Dr. F. Stoliczka.

The Hon'ble John Strachey, proposed by Col. R. Strachey, seconded by Col. Thuillier.

The following gentleman has intimated his desire to withdraw from the Society,—The Hon'ble C. P. Hobhouse.

The President remarked that as the evening was far advanced, he would suggest that the reading of the papers which had been advertised, and other communications sent to the Society, be postponed for the next meeting. This was generally accepted and the meeting broke up.

LIBRARY.

The following additions have been made to the Library since the last meeting.

Presentations.

* * Names of Donors in capitals.

The Proceedings of the Royal Society, Vol. XVI. Nos. 104, 105,—
THE ROYAL SOCIETY OF LONDON.

Proceedings of the Royal Institution of Great Britain, Vol. V., part III. No. 47,—THE ROYAL INSTITUTION.

Proceedings of the Zoological Society of London for 1868, January to June, and Index to the Proceedings from 1848—1860. Transactions of the Zoological Society of London, Vol. VI. parts 6 and 7,—THE ZOOLOGICAL SOCIETY.

Professional Papers on Indian Engineering, Vol. V. No. 21,—THE EDITOR.

The Calcutta Journal of Medicine, Nos. 9, 10 and 11,—THE EDITOR.
Rahasya Sandartha, Vol. V. No. 49,—THE EDITOR.

Classified Catalogue of printed Tracts and Books in Singhalese,—
THE COMPILER.

The Gospel of Matthew in Santhali,—THE REV. E. C. STEWART.
Santhali Vocabulary,—THE SAME.

Assay Tables of Indian and other coins by J. F. Shekleton, A. B.,
M. D.,—THE AUTHOR.

Monographie du genre *Cyathoponla* par W. T. Blanford,—THE AUTHOR.

Note sur les *Nicida* par W. T. Blanford,—THE AUTHOR.

Discours d'ouverture,—Mons. G. DR TASSEY.

Selections from the Records of the Government of India, Foreign Department, No. LXVIII.—THE GOVERNMENT OF INDIA.

Selections from the Records of the Madras Government, No. IX.—THE SAME.

Selections from the Records of the Bombay Government, No. CVIII.—THE SAME.

Report on Public Instruction in Coorg for 1867-1868,—THE SAME.

Report on Public Instruction in Mysore for 1867-1868,—THE SAME.

Report on the past famines in the Bombay Presidency,—THE SAME.

Pharmacopœia of India by E. J. Waring, M. D.,—THE SAME.

Selections from the Calcutta Gazettes, Vol. IV,—THE SAME.

Annual Report on Meteorological Observations registered in the Panjab, 1867,—THE SAME.

Panjab Products, Vol I,—THE GOVERNMENT, NORTH WESTERN PROVINCES.

Report on Insects destructive to woods and forests by Mr. R. Thompson,—THE SAME.

Report on the Trade and Customs of British Burma for 1867-1868,—THE GOVERNMENT OF BENGAL.

Geographical and Statistical Report of Tânda, by Captain D. Macdonald,—THE SURVEYOR GENERAL OF INDIA.

Annual Report of the Revenue Survey Operations for the Lower Provinces for 1867-68,—THE SAME.

General Report of the Revenue Survey operations for the Upper Circle for 1867-68,—THE SAME.

General Report on the operations of the Great Trigonometrical Survey of India for 1867-68.

Purchase.

The Calcutta Review, Nos. 94 and 95.

The Edinburgh Review, No. 262.

Revue et Magasin de Zoologie, No. 10.

Revue Archéologique, Nos. 10 and 11.

Revue des Deux Mondes, 15th October and 1st November.

Journal des Savants, September and October.

Comptes Rendus, Nos. 12-17.

The Ibis, Vol. IV. No. 16.

The Annals and Magazine of Natural History, Vol. II. No. 11.

The American Journal of Science, No. 137.

Hewitson's Exotic Butterflies, pt. 68.

APPENDIX.

**LIST OF MEMBERS
OF THE
ASIATIC SOCIETY OF BENGAL,
ON THE 31ST DECEMBER, 1868.**

Editor

LIST OF ORDINARY MEMBERS.

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The \* distinguishes Non-Subscribing, and the † Non-Resident Members.

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N. B.—Gentlemen who may have changed their residence, since this list was drawn up, are requested to give intimation of such a change to the *Secretaries*, in order that the necessary alterations may be made in the subsequent edition.

Gentlemen who are proceeding to Europe, with the intention of not returning to India, are particularly requested to notify to the *Secretaries*, whether it be their desire to continue as members of the Society.

Date of Election.		
1847	June 2.	*Abbott, Major-Genl. J., Royal Artillery.
1860	Dec. 5.	Abdullahi, Khan Bahadur, Maulvi.
1868	Sept. 2.	†Adam, R. M., Esq.
1865	June 7.	Agabeg, J., Esq.
1860	July 4.	†Ahmad Khan, Saeed, Bahadur.
1860	April 4.	*Aitchison, J. E. T., Esq., M. D.
1859	Feb. 2.	*Alabaster, C., Esq.
1866	Jan. 17.	†Allen, Lieut.-Col. A. S.
1852	July 7.	*Allen, C., Esq., B. C. S.
1864	May 4.	†Alexander, N. S., Esq., C. S.
1867	Aug. 7.	†Amery, C. F., Esq.
1860	Oct. 3.	Amir Ali Khan, Munshi.
1861	May 1.	Anderson, Dr. T., F. L. S.
1865	Jan. 11.	Anderson, Dr. J., F. L. S.
1843	Sept. 4.	*Anderson, Lieut.-Col. W., Bengal Artillery.
1866	July 4.	†Anderson, A., Esq.
1864	Dec. 7.	*Anderson, W., Esq.
1860	Nov. 7.	†Anley, W. A. D., Esq., C. E.
1861	Sept. 4.	*Asghur Ali Khan Bahadur, Nawab.
1861	July 3.	*Asphar, J. J. T. H., Esq.
1855	July 4.	Atkinson, W. S., Esq., M.A., F. L. S.
1826	Sept. 6.	Avdall, J., Esq.
1885	Oct. 7.	*Baker, Col. W. E., Bengal Engineers.
1865	Nov. 1.	Ball, V., Esq., Geol. Survey.

Europe
Calcutta
Agra
Calcutta
Allyghur
Europe
China
Allahabad
Europe
Mymensingh
Umritsir
Calcutta
Calcutta
Calcutta
Europe
Fyzabad
Europe
Sarun
Europe
Europe
Calcutta
Calcutta
Europe
Calcutta.

<u>Date of Election.</u>			
1860 Nov. 7.	†Banerji, The Rev. K. M.		Burdwan
1864 May. 4.	*Barry, Dr. J. B.		Europe
1866 Jan. 17.	Barton, The Rev. J.		Calcutta
1862 Aug. 6.	†Basevi, Capt. J. P., Royal Engineers.		Bangalore
1860 July 4.	Batten, G. H. M., Esq., B. C. S.		Calcutta
1838 Jan. 3.	*Batten, J. H., Esq., B. C. S.		Europe
1859 May 4.	Bayley, E. C., Esq., B. C. S.		Calcutta
1861 Feb. 6.	†Bayley, S. C., Esq., B. C. S.		Patna
1868 May 6.	*Baynes, J., Esq.		Europe
1849 June 6.	*Beadon, The Hon'ble Sir Cecil, B. C. S.		Europe
1864 Sept. 7.	*Beames, J., Esq., B. C. S.		Europe
1841 April 7.	Beaufort, F. L., Esq., B. C. S.		Calcutta
1861 Sept. 4.	*Beavan, Lieut. R. C., late 62nd B. N. I.		Europe
1847 Aug. 4.	*Beckwith, J., Esq.		Europe
1867 July 3.	†Belletty, N. A., Esq., Civil Assistant Surgeon.		Cherra-Punji
1830 Sept. 1.	*Benson, Lient.-Col. R.		Europe
1862 Oct. 8.	†Bernard, C. E., Esq., B. C. S.		Nagpore
1862 June 4.	†Bhan Daji, Dr.		Bombay
1868 Apr. 1.	Bholanátha Chandra, Bábú.		Calcutta
1864 Nov. 2.	Bhudeva Mukerjea, Bábú.		Chinsurah
1840 July 15.	*Birch, Major-General Sir R. J. H., K. C. B.		Europe
1846 Mar. 4.	*Blaggrave, Major T. C., 26th Regt. B. N. I.		Europe
1859 Sept. 7.	Blane, Lient.-Col. S. J.		Calcutta
1857 Mar. 4.	Blanford, H. F., Esq., A. R. S. M., F. G. S.		Calcutta
1859 Aug. 3.	Blanford, W. T., Esq., A. R. S. M., F. G. S., Geol. Survey.		Calcutta
1864 April 6.	Blochmann, H., Esq., M. A.		Calcutta
1857 Aug. 2.	*Bogle, Lient.-Col. Sir A., Kt.		Europe
1859 Aug. 3.	Bólúchanda Sing, Bábú.		Calcutta
1866 June 6.	Bourke, W. M., Esq.		Calcutta
1867 May 1.	†Bonavia, E., Esq., M. D., Asst. Surgeon.		Lucknow
1859 Oct. 12	†Bowring, L. B., Esq., B. C. S.		Mysore, Coorg
1868 Jan. 15.	†Boxwell, J., Esq., C. S.		Puri
1854 Nov. 1.	*Boycott, Dr. T., B. M. S.		Europe
1860 Mar. 2.	Brandis, Dr. D.		Calcutta
1860 Oct. 3.	*Brandreth, The Hon'ble J. E. L.		Europe
1862 Jan. 15.	*Briggs, Lient.-Col. D.		Europe
1866 April 4.	*Broderick, H. C., Esq., M. D.		Europe
1847 June 2	*Brodie, Capt. T., 5th Regt. B. N. I.		Europe

Date of Election.

1866	Jan. 17.	*Brown, Lieut.-Col. D.	Europe
1860	Nov. 7.	†Browne, Capt. Horace A.	Amherst
1866	June 6.	†Brownfield, C., Esq.	Kamarup.
1868	June 3.	†Buck, E. C., Esq., C. S.	Cawnpore
1866	June 6.	Buckle, Dr. H. B., C. B.	Calcutta
1856	Sept. 3.	Bashiruddin, Sultan Mohammad.	Serampore
1867	Sept. 4.	†Butler, Lieut. J.	Gowhati
1860	June 6.	†Campbell, C., Esq., C. E.	Jubbulpore
1859	Sept. 7.	*Campbell, Dr. A.	Europe
1863	June 3.	*Campbell, The Hon'ble G.	Europe
1860	Jan. 3.	†Carnac, H. Rivett, Esq., B. C. S.	Nagpore
1865	Nov. 1.	†Carnegy, P., Esq.	Fyzabad
1867	Dec. 4.	†Chambers, F. J., Esq.	Lucknow
1868	Augt. 5.	†Chandramohana Gosvami.	Gowhati
1867	Dec. 4.	†Chisholm, J. W., Esq.	Belaspore
1863	Aug. 5.	†Chandranatha Raya, Kumar.	Natore
1868	Feb. 5.	†Clark, Major E., Bengal Staff.	Baraitch
1863	April 1.	*Cleghorn, Dr. H.	Europe
1864	May 4.	†Cline, Esq., G. W., LL. D., F. G. S.	Nagpore
1861	Sept. 4.	†Cockburn, J. F., Esq., C. E.	Kurhurbari
			Colliery
1868	Nov. 4.	†Cole, Lieut. H. H., Royl. Engr.	Sealkote
1862	April 2.	†Colles, J. A. P., Esq., M. D.	Hazara
1851	Mar. 5.	*Colvin, J. H. B., Esq., B. C. S.	Europe
1868	Dec. 2.	Cooke, J. E., Esq.	Calcutta
1860	Dec. 5.	*Cooper, F. H., Esq., B. C. S.	Europe
1857	Mar. 4.	*Cowell, E. B., Esq., M. A.	Europe
1868	May 6.	†Coxhead, T. E., Esq., C. S.	Magura
1866	May. 2.	*Cox, W. H., Esq.	Europe
1866	Jan. 17.	Crawford, J. A., Esq., C. S.	Calcutta
1861	July 3.	*Crockett, Oliver R., Esq.	China
1867	Aug. 7.	†Curran, R. H., Esq., L. R. C. S., L. K. R. C. P.	Port Blair
1868	Sept. 2.	Cutsem, E. Ch. Van, Esq.	Calcutta
1866	Feb. 7	†Daly, N., Esq.	Mayanoung, Burma
1862	April 2.	*Dalrymple, F. A. E., Esq., C. S.	Europe
1847	June 2.	†Dalton, Lieut.-Col. E. T., 9th Regt. B. N. I.	Chota Nag- pore
1861	Mar.	*Davey, N. T., Esq., Revenue Surv.	Europe
1865	May	†Davies, C., Esq.	Rotasghur
1861	Nov.	†Davies, R. H., Esq., B. C. S.	Lucknow
1864	July	Deventra Mallika, Bábú.	Calcutta
1856	June	*DeBourbel, Major R., Bengal Engrs.	Europe
1861	June	*Denison, His Excellency Sir W., K. C. B.	Europe

Date of Election.			
1863	Feb. 4.	†Dev Narayana Singh, The Hon'ble Rájah.	Benares
1861	Mar. 6.	*Devereux, The Hon'ble H. B., B. C. S.	Europe
1862	May 7.	†Dhanapati Singha Dooghur, Ráyah Bahádúr.	Azimgunj
1853	Sept. 7.	Dickens, Lieut.-Col. C. H.	Calcutta
1860	Nov. 7.	Diganvara Mitra, Bábu.	Calcutta
1859	Sept. 7.	*Donglas, Col. C.	Europe
1864	Dec. 7.	*Dunlop, H. G., Esq.	Europe
1867	June 5.	†Duthoits, W., Esq., C. S.	Mirzapore
1861	May 1.	*Earle, Capt. E. L., Bengal Artillery.	Europe
1857	May 6.	*Eatwell, Dr. W. C. B.	Europe
1868	Oct. 7.	†Edowes, W., Esq., M. D.	Erinpur
1840	Oct. 7.	*Edgeworth, M. P., Esq., B. C. S.	Europe
1863	May 6.	†Edgar, J. W., Esq., B. C. S.	Cachar
1865	Feb. 1.	†Edgerton, Ph., Esq., B. C. S.	Umritsar
1846	Jan. 7.	*Elliott, Sir Walter, late M. C. S.	Europe
1859	Nov. 2.	†Elliott, C. A., Esq., B. C. S.	Farrukhabad
1856	Mar. 5.	*Ellis, Lieut.-Col. R. R. W., 23rd Regt. B N. I.	Europe
1854	Nov. 1.	†Elphinstone, Capt. M. W., 4th Regt. B. N. I.	Lahore
1868	Sept. 2.	Ernsthausen, Baron O.	Calcutta
1861	Jan. 9.	*Erskine, The Hon'ble C. J., Bombay C. S.	Europe
1856	Aug. 6.	*Erskine, Major W. C. B.	Europe
1863	Oct. 7.	Ewart, Dr. J.	Calcutta
1862	Aug. 6.	*Eyre, Col. Vincent, C. B.	Europe
1865	June 7.	Fawcett, Dr. J.	Calcutta
1851	May 7.	Fayrer, Dr. J., C. S. I.	Calcutta
1863	Jan. 15.	†Fedden, Francis, Esq., Geol. Survey.	Bombay
1868	May 6.	*Field, C. D., Esq., C. S.	Europe
1859	Oct. 12.	*Fisher, A., Esq.	China
1860	Mar. 7.	*Fitzwilliam, The Hon'ble W. S.	Europe
1865	April 5.	†Fleming, Dr. J. M., 29th N. I.	Nimar,
1867	April 3.	*Ford, Lieut.-Col. B.	Europe
1861	Feb. 6.	†Forest, R., Esq., Civil Engineer.	Etwah
1868	June 3.	Francis, Dr. C. R.	Calcutta
1863	Dec. 2.	†Forsyth, Lieut. J., Bengl. Staff Corps.	Nimar,
1863	June 3.	†Forsyth, T. D., Esq., C. B.	Jullundur
1868	April. 1.	†Frederic of Schleswig Holstein, H. S. H. Prince.	Europe
1860	Mar. 7.	*Frere, His Excellency Sir H. Bartle, K. C. B., B. C. S.	Europe

Date of Election.			
1859	Oct. 12.	*Furlong, Major J. G. R.	Europe
1859	Dec. 7.	Futteh Ali, Maulvi.	Calcutta
1867	Sept. 4.	Fyfe, W., The Rev.	Calcutta
1849	Sept. 5.	†Fytche, Col. A., C. S. E., Chief Comiss. of Burmah.	Rangoon
1864	Aug. 11.	†Garrett, C. B., Esq., C. S.	Shahabad
1859	Aug. 3.	Gastrell, Col. J. E., 13th Regt. N. I., Supdt. Rev. Survey.	Calcutta
1867	Dec. 4.	†Gay, E., Esq.	Bombay
1867	Sept. 4.	Gauvain, Capt. V.	Calcutta
1868	Nov. 4.	†Geddes, J. C., Esq., C. S.	Pooree
1859	Sept. 7.	Geoghegan, J., Esq., B. C. S.	Calcutta
1865	June 7.	†Giles, A. H., Esq.	Krishnagur
1842	Sept. 2.	*Gladstone, W., Esq.	Europe
1867	May 1.	Glover, the Hon'ble F.	Calcutta
1861	Feb. 6.	†Godwin-Austen, H. H., Capt., Topograph. Survey.	Cherra Poonji
1859	Sept. 7.	*Goodeve, E., Esq., M. D.	Europe
1862	July 2.	Gordon, J. D., Esq., C. S.	Calcutta
1864	Deo. 5.	†Gurucharana Dása, Bábú.	Jamukandi
1862	Feb. 5.	†Gauradasa Basaka, Bábú.	Khuna
1863	Nov. 4.	†Gowan, Lieut.-Col. J. G.	Morar, Gwalior
1859	Dec. 7.	*Grant, Sir J. P., K. C. B.	Europe
1860	Jan. 4.	*Grant, T. R., Esq.	Europe
1867	Aug. 7.	Granville, W. L., Esq.	Calcutta
1867	June 5.	†Gregory, Lieut. J., Depy. Comr.	Samoogooting
1860	July 4.	Grey, The Hon'ble W., B.C.S., Lieut.- Governor of Bengal.	Calcutta
1866	June	†Gribble, T. W., Esq., B. C. S.	Kooshtea
1861	Sept.	†Griffin, L. H., Esq., B. C. S.	Umritsar,
1860	Nov.	†Griffith, R. T. H., Esq.	Benares
1861	Feb.	†Growse, F. S., Esq., B. C. S.	Mynpoorie
1862	Feb.	*Guthrie, Col. C. S., Bengal Engrs.	Europe
1867	July 3.	†Hacket, C. A., Esq., Geol. Survey.	Agra
1847	June 2.	*Hall, F. E., Esq., M. A., D. C. L.	Europe
1866	Jan. 17.	†Hamilton, Major T. C.	Rangoon
1863	June 3.	*Hamilton, Col. G. W.	Europe
1855	Mar. 7.	†Hamilton, R., Esq.	Wardah
1847	May 5.	*Hannington, Col. J. C., 63rd Regt. N. I.	Europe
1859	Oct. 12.	*Hardie, Dr. G. K.	Europe
1866	Nov. 1.	Harendra Krishna, Kumar.	Calcutta
1862	Oct. 8.	*Harington, The Hon'ble H. B.	Europe
1860	Oct. 8.	†Harris, E. B., Esq., C. E., District Engineer.	Burdwan

Date of Election.		
1861	Feb.	6.
1859	Oct.	12.
1862	Aug.	6.
1866	April	4.
1859	Aug.	3.
1853	July	6.
1854	Mar.	1.
1866	Jan.	17.
1868	Aug.	5.
1860	May	2.
1844	Mar.	7.
1863	July	1.
1860	Mar.	7.
1863	Jan.	15.
1867	Sept.	4.
1867	Aug.	17.
1867	Aug.	7.
1868	Nov.	4.
1866	Feb.	7.
1867	May	1.
1868	April	1.
1866	Mar.	7.
1860	Jan.	4.
1862	Oct.	8.
1853	Dec.	7.
1864	Sept.	7.
1841	Mar.	5.
1861	Dec.	4.
1864	Sept.	7.
1845	Dec.	3.
1866	Feb.	7.
1847	June	2.
1862	Mar.	5.
1867	Dec.	4.
1859	Sept.	7.
1866	Mar.	7.
1858	Feb.	3.

†Harrison, A. S., Esq., B. A.

†Haughton, Lieut.-Col. J. C., C. S. I.

*Heeley, W. L., Esq., C. S.

Henry, N. A., Esq.

†Henessey, J. B. N., Esq.

*Herschel, W. J., Esq., B. C. S.

*Hichens, Lieut. W., Bengal Engrs.

†Hicks, J. G., Esq.

†Hobart, R. T., Esq., C. S.

Hobhouse, The Hon'ble C. P., B.C.S.

†Hopkinson, Lieut.-Col. H. H.

*Horne, C., Esq., C. S.

Hovenden, Major J. J., Bengal Engrs.

†Howell, M. S., Esq., C. S.

†Hughes, A. J., Esq., C. E.

†Hughes, T. H., Esq., A. R. S. M., F. G. S., Geol. Survey.

*Hughes, Lieut. W. G.

†Holroyd, Capt. W. R. M.

*Hoyle, G. W., Esq.

*Hyatt, Dr. B. N., Civil Surgeon.

Hyde, Col. H.

†Irvine, W., Esq., C. S.

†Iunes, Major J. J. M.

†Irwin, Valentine, Esq., C. S.

†Isirvaprasáda Singha, Bahádur, Rájah,

Jackson, The Hon'ble E.

*Jackson, W. B., Esq., B. C. S.

*James, Major H. R., C. B.

*Jardine, R., Esq., C. S.

†Jerdon, Dr. T. C.

†Johnson, W. H., Esq.

†Johnstone, J., Esq.

†Johnstone, Capt. J. W. H., Assistant Commissioner.

†Johnstone, Lieut. J., Special Asst. Keonghur.

*Jones, R., Esq.

†Jayakissen, Dásá Bahádur, Rájah.

Kadarenatha Mukerji.

Kaliprasanna Singha, Bábú.

Bareilly.

Cooch Behar

Europe

Calcutta

Dehra Dhoon

Europe

Europe

Lahore

Basti

Calcutta

Assam

Europe

Calcutta

Dehra Dhoon

Dariabad

Hazarebagh

Europe

Punjab

Europe

Europe

Calcutta

Mozuffernug-
ger

Punjab

Tipperah

Benares

Calcutta

Europe

Europe

Europe

Assam

Sealkote

Europe

Shahpore

Bhuddruck

Europe

Allyghur

Bhowanipore

Calcutta

Date of Election

1863	July	1.	*Kane, H. S., Esq., M. D.	Europe
1868	Feb.	5.	†Kavanagh, J., Esq.	Goond, Oudh
1850	April	3.	*Kay, The Rev. W., D. D.	Europe
1861	Dec.	15.	†Kempson, M., Esq., M. A.	Bareilly
1867	Dec.	4.	†King, G., Esq., M. D.	Saharunpore
1867	Mar.	6.	†King, Capt. H. W.	India
1862	Jan.	15.	†King, W., Jr., Esq., Geol. Survey.	Madras
1867	Mar.	6.	†Knox, G. E., Esq., C. S.	Meerut
1839	Mar.	6.	*Laidlay, J. W., Esq.	Europe
1861	Mar.	6.	*Laing, The Hon'ble S.	Europe
1863	Sept	2.	Lane, T. B., Esq., B. C. S.	Calcutta
1851	Dec.	3.	†Layard, Lieut.-Col. F. P.	Bhagulpore
1868	Sept.	2.	Lazarus, C., Esq.	Calcutta
1852	April	7.	*Lees, Major W. N., LL. D.	Europe
1868	Feb.	5.	†Lees, L. H., Esq., M. D.	Simla
1868	July	1.	†Leitner, Dr. G. W.	Lahore
1859	Dec.	7.	Leonard, H., Esq., C. E.	Calcutta
1865	June	7.	*Lewin, Capt. T. H.	Europe
1856	Feb.	6.	*Liebig, Dr. G. Von.	Europe
1860	Jan.	4.	Lindsay, E. J., Esq.	Calcutta
1862	Dec.	3.	*Lobb, S., Esq., M. A.	Europe
1864	Nov.	2.	Locke, H. H., Esq.	Calcutta
1866	May	2.	*Lovett, Lieutenant B.	Ispahan
1866	Jan.	17.	†Low, James, Esq., G. T. S.	Dehra Dhoon
1861	April	3.	†Lumsden, Lieut.-Col. P. S.	Simla
1854	Nov.	1.	*Lushington, F. A., Esq., B. C. S.	Europe
1868	Dec.	2.	†Macauliffe, M., Esq., C. S.	Multan
1866	June	6.	Macdonald, Major J., Staff Corps.	Calcutta
1848	April	5.	†MacLagan, Lieut.-Col. R., F.R.S.E.	Lahore
1866	Jan.	17.	†Macgregor, Lieut. C. M.	Simla
1865	Nov.	1.	Mackenzie, A., Esq., C. S.	Calcutta
1853	April	6.	Macrae, Dr. A. C.	Calcutta
1867	July	3.	Mackenzie, C. S., Esq., M. D.	Calcutta
1867	July	3.	Macnamara, Dr. C.	Calcutta
1868	Jan.	15.	Maine, The Hon'ble H. S.	Calcutta
1867	April	3.	†Mainwaring, Lieut.-Col. G.	Darjeeling
1860	Jan.	4.	*Mair, D. K., Esq., M. A.	Europe
1865	Mar.	1.	Malleson, Lieut.-Col. G. B.	Calcutta
1862	Sept.	3.	†Mallet, F. R., Esq., Geol. Survey.	Nowgong, Bengal
1860	July	4.	†Man, E. G., Esq.	Burdwan
1852	Nov.	3.	Manickjee Rustomjee, Esq.	Calcutta
1861	June	5.	†Mána Singha Bahádur, Mahárájah.	Oudh
1867	Mar.	6.	Markby, The Hon'ble W.	Calcutta

<u>Date of Election.</u>			
1864 Aug. 11.	*Marks, The Rev. J. Ebenezer.		Europe
1868 July	†Marshall, Lieut. C. H. T.		Lahore
1850 Jan.	*Marshman, J. C., Esq.		Europe
1863 Oct.	†Martin, T., Esq., C. E.		Midnapore
1863 Nov.	*McClelland, Dr. J.		Europe
1837 Oct.	†McLeod, The Hon'ble Sir D. F. C. B., B. C. S.		Lahore
1860 Mar. 7.	†Medlicott, H. B., Esq., F. G. S., Geol. Survey.		Daltongunj
1861 Feb. 6.	Melville, Capt. A. B., late 67th N. I., Surv. Genl.'s Dept.		Calcutta
1855 Nov. 7.	*Middleton, J., Esq.		Europe
1867 June 5.	Milman, R. D. D., The Right Rev. Lord Bishop of Calcutta.		Calcutta
1850 April 3.	*Mills, A. J. M., Esq., B. C. S.		Europe
1867 April 3.	Mahendralal Saracara, Dr.		Calcutta
1847 April 7.	†Monev, D. J., Esq., B. C. S.		Bhagulpore
1856 Feb. 6.	*Monev, W. J., Esq.		Europe
1867 Mar. 6.	†Montgomerie, Capt. T. G.		Dera Doon
1865 July 5.	†Morland, Major J.		Delhi
1854 Dec. 6.	†Morris, G. G., Esq., B. C. S.		Backergunge
1868 Aug. 5.	†Muir, Capt. W. J. W.		Abu,
1837 July 5.	*Muir, J., Esq.		Europe
1854 Oct. 11.	†Muir, The Hon'ble Sir. W., B. C. S.		Allahabad
1862 July 2	*Napier of Magdala, Lord R. General, R., G. C. S. I. K. C. B.		Bombay
1867 May 1.	Nelson, J. B., Esq.		Calcutta
1860 Nov. 7.	*Newmarch, Lieut-Col. C. D.		Europe
1865 Feb. 1.	*Newal Kishwar, Münshi.		Lucknow
1852 Sept. 1.	*Nicholls, Capt. W. T., 24th Regiment M. N. I.		Europe
1863 Jan. 15	Norman, The Hon'ble J. P.		Calcutta
1867 June 5	Obhayacharana Mallika, Bābu.		Calcutta
1860 June 4	*Oldham, Ch., Esq., Geol. Survey.		Europe
1851 June 4	Oldham, Th., Esq., LL D., F R. S. Geol. Survey.		Calentta
1867 Aug. 7	†Oldham, A., Esq., C. E.		Koosthea
1864 Dec. 7	Onslow, D. B., Esq.		Calcutta
1866 July 4	*Ormsby, M. H., Esq., C. E., Geol. Survey.		Europe
1837 June 7	*O'Shaughnessy, Sir W. B.		Europe
1847 Feb. 10	*Ousely, Major W. R.		Europe
1864 Mar. 2	*Palmer, Dr. W. J.		Europe
1868 Nov. 4	†Pearson, C., Esq.		Punjab
1862 May 7	Partridge, S. B., Esq., M. D.		Calcutta
1868 Aug. 5	†Perkins H. E., Esq., C. S.		Hoshyarpore
			Punjab

Date of Election.			
1867	Feb.	6.	Paul, J., Esq.
1860	Feb.	1.	*Pearse, Major G. G.
1867	Mar.	6.	Pearimahana Mukerji, M.A., Bábu.
1864	Mar.	2.	*Pellew, F. H., Esq., C. S.
1865	Sept.	6.	†Peppe, J. H., Esq.
1868	May	6.	Peterson, F. W., Esq.
1867	Nov.	6.	*Petit, Mons. Eugene.
1835	July	1.	*Phayre, Col., Sir A. P., K.C.S.I., C.B.
1864	Nov.	2.	Phear, The Hon'ble J. B.
1868	May	6.	Pirie, A., Esq.
1867	Sept.	4.	*Place, Mons. V. Consul-Gen. France.
1862	Oct.	8.	Pulinvehari Sen, Bábu.
1868	April	1.	†Pramathanatha Raya, Kumar.
1839	Mar.	6.	Pratt, Ven'ble Archdeacon J. H., M.A
1860	Jan.	4.	Pryanath Seta, Bábu.
1825	Mar.	9.	*Prinsep, C. R., Esq.
1864	Feb.	3.	†Pullan, Lieut. A., G. T. Survey.
1853	April	6.	Radhanatha Siklara, Bábu.
1849	Sept.	5.	Rajendra Dutt, Bábu.
1856	Mar.	5.	Rajendralála Mitra, Bábu.
1868	Jan.	15.	†Rakhaladasa Haldára, Bábu.
1864	May	4.	Ramánath Bose, Bábu.
1837	Feb.	1.	Ramánath Takura, Bábu.
1866	Jan.	17.	†Attray, A., Esq., Asst. Commr., Hill Tracts.
1860	Mar.	7.	†Reid, H. S., Esq.
1868	June	3.	Reinhold, H., Esq.
1868	July	1.	†Renny, R. H., Esq.
1864	Dec.	7.	†Richardson, R. J., Esq., C. S.
1857	June	7.	*Riddell, Hon'ble H. B., B. C. S.
1868	April	1.	Robb, G., Esq.,
1868	July	1.	Roberts, The Rev. J.
1863	April	1.	†Robertson, C., Esq., C. S.
1865	Feb.	1.	Robinson, S. H., Esq.
1847	Dec.	1.	*Rogers, Capt. T. E.
1866	Dec.	5.	Ross, J. M., Esq.
1859	Sept.	7.	†Russell, A. E., Esq., B. C. S.
1865	June	7.	Sáradáprásad Mukerji, Bábu.
1856	Aug.	6.	Satyasaran Ghosala, Rájah. S.
1861	Dec.	4.	†Saunders, C. B., Esq., B. C.
1864	June	1.	Saunders, J. O'B., Esq.
1854	Dec.	6.	†Saxton, Lt.-Col. G. H., F. G. S., 38th M. N. I.
1854	May	2.	Schiller, F., Esq.
1860	Feb.	1.	Scott, Col. E. W. S.
			Calcutta
			Europe
			Uttaraparah
			Europe
			Gya
			Calcutta
			Europe
			Europe
			Calcutta
			Berhampore
			Digapati
			Calcutta
			Calcutta
			Europe
			Dehra Dhoon
			Calcutta
			Calcutta
			Calcutta
			Purulia
			Calcutta
			Calcutta
			Calcutta
			Chittagong
			Oudh
			Calcutta
			Chittagong
			Shahabad
			Europe
			Calcutta
			Calcutta
			Nyne Tál
			Calcutta
			Europe
			Calcutta
			Burdwan
			Baraset
			Bhooóylas,
			Calcutta
			Hyderabad
			Calcutta
			Ootacamund
			Calcutta
			Europe

Date of Election.		
1866	Jan. 17.	†Seaton, Capt. W. J.
1860	July 4.	†Shelverton, G., Esq.
1866	Sept. 5.	†Sherer, Major J. F.
1867	April 3.	†Sheriful Omrah, The Hon'ble Navab Sir, Bahádúr, K. C. S. I.
1845	Jan. 14.	*Sherwill, Lt.-Col. W. S., 66th Regiment B. N. I., F. G. S., F. R. G. S.
1868	Oct. 7.	Shircore, Dr. S. M.
1863	April 1.	†Showers, Lieut.-Col. C. L.
1866	June 6.	Sime, J., Esq. B. A.
1864	Sept. 7.	†Sladen, Capt. E. B.
1866	June 6.	†Smart, R. B., Esq., Rev. Sur.
1865	July 5.	†Smith, D. Boyes, Esq., M. D.
1868	April 1.	†Smith, McLaren W., Esq.
1868	July 1.	Smith, W., Esq., C. E.
1856	Feb. 6.	*Smith, Col. J. F.
1854	Sept. 6.	†Spankie, The Hon'ble R., B. C. S.
1864	Mar. 2.	*Spearman, Lieut. R.
1867	May 1.	*Steel, Lieut. E. I. R. A.
1843	Sept. 4.	†Stevens, W. H., Esq., C. E.
1867	Dec. 4.	*Stephen, Major J. G., 8th N. I.
1863	Sept. 2.	Stewart, R. D., Esq.
1864	April 6.	†Stewart, J. L., Esq., M. D.
1861	Sept. 4.	Stokes, Whitley, Esq.
1863	Nov. 4.	Stoliezka, F., Esq., Ph. D., F. G. S., Geol. Survey.
1868	Sept. 2.	Stoney, R. V., Esq., C. S.
1843	May 3.	Strachey, Col. R., F. R. S., F. L. S., F. G. S.
1859	Mar. 2.	†Stubbs, Major F. W., Beng. Artillery.
1858	July 7.	*Sutherland, H. C., Esq., B. C. S.
1864	Aug. 11.	Swinhoe W., Esq.
1863	Sept. 3.	Symacharana Sircar, Bábú.
1866	Jan. 17.	Tagore, G. M., Esq.
1865	Sept. 6.	Tawney, C. H., Esq.
1865	April 5.	*Taylor, R., Esq.
1860	May 2.	Temple, Sir R., K. C. S. I., B. C. S.
1859	Mar. 2.	†Theobald, W., Jr., Esq.; Geological Survey.
1860	June 6.	*Thompson, J. G., Esq.
1863	Mar. 4.	*Thompson, Major G. H., Bengal Staff Corps.
		Rangoon
		Waltair
		Kamrup
		Madras
		Europe
		Calcutta
		Agra
		Calcutta
		Mandalay
		Raiport, Central Province
		Calentta
		Berhampore
		Calentta
		Europe
		Agra
		Rangoon
		Europe
		Darbhanga
		Europe
		Calentta
		Lahore
		Calcutta
		Unritsar
		Europe
		Calcutta
		B. Burma
		Europe
		Europe

Date of Election.			
1863	June	4.	†Thornton, T. H., Esq.
1847	June	2.	*Thuillier, Col. H. L., F. R. G. S. Bengal Artillery.
1863	May	6	†Thuillier, Lt. H. R.
1862	July	2	*Thurlow, The Hon'ble T. J. H.
1865	July	5	†Tolbort, T. W. H., Esq., C. S.
1865	July	5	Tounnerre, Dr. C. F.
1862	Feb.	5	*Torrens, Col. H. D.
1861	June	5	†Tremlett, J. D., Esq., C. S.
1863	Mar.	4	*Trevelyan, The Right Hon'ble Sir C., K. C. B.
1841	Feb.	3	*Trevor, The Hon'ble G. B., B. C. S.
1864	Mar.	2	†Trevor, Lt. E. A., Royal Eng. Marine Lines.
1861	Sept.	4	Tween, A., Esq., Geological Survey.
1863	May	6	†Tyler, Dr. J.
1860	May	2.	†Vanrenen, Capt. A. D., late 71st B. N. I.
1864	Feb.	3.	†Verchere, A. M., Esq., M. D.
1861	April	6.	†Vijayaráma Gajapati Raj Munnia Sultan Bahádúr, Maharajah Muza.
1865	Nov.	1.	Waldie, D., Esq., F. R. C. S.
1861	May	1.	†Walker, Lt.-Col. J. T., Bomb. Enges.
1863	Dec.	2.	†Walker, A. G., Esq., C. S.
1863	May	6.	*Wall, P. W., Esq., C. S.
1863	Oct.	7.	Waller, W. K., Esq., M. B.
1863	Dec.	2.	Walters, The Rev. M. D. C.
1862	Jan.	15.	+Ward, G. E., Esq., B. C. S.
1852	July	7.	*Ward, J. J., Esq., B. C. S.
1859	July	6.	*Warrand, R. H. M., Esq., B. C. S.
1865	May	3.	*Waterhouse, Lieut. J., Royal Ar- tillery,
1854	July	5.	*Watson, J., Esq., B. C. S.
1847	Nov.	3.	*Waugh, Major-General Sir A. S., C. B., F. R. S., F. R. G. S.
1867	Feb.	6.	†Westmacott, E. V., Esq., B.A., C.S.
1862	Oct.	8.	Wheeler, J. T., Esq.
1867	Aug.	7.	†Wilcox, F., Esq., Bengal Police.
1864	Mar.	2.	†Wilkinson, C. J., Esq.
1861	Sept.	4.	†Williams, Dr. C. H. M.'s 68th Regt.
1867	Jan.	16.	†Williamson, Lieut. W. J.
1867	Mar.	6.	Willson, W. G., Esq., B. A.
1859	Sept.	7.	†Wilson, W. L., Esq., Geol. Survey.
1859	Aug.	3.	†Wilmot, C. W., Esq.
1865	Feb.	1.	†Wilmot, E., Esq.
1866	Mar.	7.	†Wise, Dr. J. F. N.

Punjab, Lahore

Calcutta

Faridpore

Europe [jab
Ludiana, Pun-
Calcutta

Europe

Simla

Europe

Europe

Bombay

Calcutta

Mynporie

Bijnour

Jellunder

Vizianagaram

Calentta

Mussoorie

Onao, Onih

Europe

Calentta

Calcutta

Meenut

Europe

Europe

Europe

Europe

Europe

Dinagepore

Calentta

Prulea,

Calentta

Rangoon

Garrow Hills

Calentta

Saugor

Rájmháhl

Delhi

Dacca

Date of Election.

1867	July	3.	†Wood, Dr. J. J.	Ranchee
1851	May	7.	Woodrow, H., Esq., M. A.	Calcutta
1859	Mar.	2.	*Wortley, Major A. H. P.	Europe
1862	Aug.	6.	*Wylie, J. W. Esq., Bombay C. S.	Europe
1868	June	3.	Yatindramohana Thakura.	Calcutta
1858	April	4.	*Young, Lt.-Col C. B.	Europe
1856	July	2.	*Yule, Col. H., R. E.	Europe
1867	Mar	6	Yogendranātha Malika	Andul

LIST OF HONORARY MEMBERS.

Date of Election

1825	Mar.	9.	M. Garcin de Tassy, Membre de l'Inst.	Paris
1826	"	1.	Sir John Phillipart.	London
1829	July	1.	Count De Noe.	Paris
1831	"	7.	Prof. C. Lassen.	Bonn
1834	Nov.	5.	Sir J. F. W. Herschel, F. R. S.	London
1834	"	5.	Col. W. H. Sykes, F. R. S.	London
1835	May	6.	Prof. Lea.	Philadelphia
1842	Feb.	4.	Dr. Ewald.	Göttingen
1842	"	4.	Right Hon'ble Sir Edward Ryan, Kt.	London
1843	Mar.	30.	Prof. Jules Mohl, Memb. de l' Institut.	Paris
1847	May	5.	His Highness Hekekyan Bey.	Egypt
1847	Sept.	1.	Col. W. Munro.	London
1847	Nov.	3	His Highness the Nawab Nazim of Bengal.	Murshidabad
1848	Feb.	2	Dr. J. D. Hooker, R. N., F. R. S.	Kew
1848	Mar.	8	Prof. Henry.	Princeton, United States
1853	April	6.	Major-Gen. Sir H. C. Rawlinson, K. C. B., F. R. S., D. C. L.	London
1854	Aug.	2	Col. Sir Proby T. Cautley, K. C. B., F. R. S.	London
1858	July	6	B. H. Hodgson, Esq.	London
1859	Mar.	2	The Hon'ble Sir J. W. Colvile, Kt	Europe
1860	"	7	Prof. Max Müller.	Europe
1860	Nov.	7	Mons. Stanislas Julien.	Oxford
1860	"	7	Dr. Robert Wight.	Paris
1860	"	7	Edward Thomas, Esq.	London
1860	"	7	Dr. Aloys Sprenger.	London
1860	"	7	Dr. Albrecht Weber.	Germany
1865	Sept.	6	Edward Blyth, Esq.	Berlin
1868	Feb.	5	Genl. A. Cunningham.	Europe
1868	"	5	Prof. Bápú Déva Sástri.	London
1868	"	5	Dr. T. Thomson, F.R.S., F.L.S., F.G.S.	Benares
1868	Sept.	2	A. Grote, Esq., C. S.	London

LIST OF CORRESPONDING MEMBERS.

Date of Election.			
1844 Oct. 2.	Macgowan, Dr. J.		Europe
1856 June 4.	Kramer, Herr. A. von		Alexandria
1856 , 4.	Porter, The Rev. J.		Damascus
1856 , 4.	Schlagintweit, Herr H. von		Bavaria
1856 , 4.	Smith, Dr. E.		Beyrouth
1856 , 4.	Taylor, J., Esq.		Bussorah
1856 , 4.	Wilson, Dr.		Bombay
1857 Mar. 4.	Neitner, J., Esq.		Ceylon
1858 Mar. 3.	Schlagintweit, Herr H. R. von		Giesen
1859 Nov. 2.	Frederick, Dr. H		Batavia
1859 May 4.	Bleeker, Dr. H.		Batavia
1860 Feb. 1.	Baker, The Rev. H.		E. Malabar
1860 , 1.	Swinhoe, R., Esq., H. M.'s Consul.		Amoy
1860 April 4.	Haug, Dr. M.		Poonah
1861 July 3.	Gosche, Dr. R.		Berlin
1862 Mar. 5.	Murray, A., Esq.		London
1863 Jan. 15.	Goldstucker, Dr. T.		London
1863 July 4.	Barnes, R. H., Esq.		Ceylon
1866 May 7.	Schalgintweit, Prof. E. von		Prussia
1866 , 7.	Sherring, The Rev. M. A.		Europe
1868 Feb. 5.	Foucaux, M. F. H.		Paris
1868 , 5.	Holmboe, Prof.		Christiania

LIST OF ASSOCIATE MEMBERS.

1835 Oct.	Stephenson, J., Esq.	Europe
1838 Feb.	Keramut Ali, Saied.	Hooghly
1843 Dec. 6.	Long, The Rev. J.	Calcutta
1865 May 3.	Dall, The Rev. C. H. A.	Calcutta

ELECTIONS IN 1868.

ORDINARY MEMBERS.

J. Boxwell, Esq., C. S.	Pooree
Bábu Rakhaladasa Haldára.	Maunbhun
Major E. Clark.	Baraich, Oudh
J. Kavanagh, Esq.	Fyzahad, Oudh
L. H. Lee, Esq., M. D.	Simla
G. Robb, Esq.	Calcutta
H. S. H. Prince Frederick of Schleswig Holstein.	Lahore
W. M. Smith, Esq.	Berhampore

Cumara Pramathanatha Raya.	Degapati.
Bábu Bholanatha Chandra.	Calcutta
Col. H. Hyde.	Calcutta
J. Baynes, Esq.	Calcutta
T. E. Coxhead, Esq., C. S.	Magora,
C. D. Field, Esq., C. S.	Calcutta
F. W. Peterson, Esq.	Calcutta
A. Pirie, Esq.	Calcutta
E. C. Buck, Esq., C. S.	Cawnpore
Bábu Yatindramohana Thakura.	Calcutta
H. Reinhold, Esq.	Calcutta
Dr. C. R. Francis.	Calcutta
Dr. G. W. Leitner.	Lahore
Lieut. C. H. T. Marshall.	Lahore
The Rev. J. Roberts.	Calcutta
R. H. Renny, Esq.	Chittagong Hill- Tracts
W. Smith, Esq., C. E.	Calcutta
Pandita Chandramohana Gosvami.	Gowhati
R. T. Hobart, Esq., C. S.	Bustee
Capt. W. J. W. Muir.	Abu, Rajputna
H. E. Perkins, Esq., C. S.	Hoshigarpore
R. M. Adam, Esq.	Agra
E. Ch. Van-Cutsem, Esq.	Calcutta
Baron O. Ernsthausen.	Calcutta
C. Lazarus, Esq.	Calcutta
R. V. Stoney, Esq., C. S.	Calcutta
W. Eddowes, Esq., M. D.	Erinpur
Dr. S. M. Shireore.	Calcutta
Lieut. H. H. Cole, R. E.	Sealkote
Capt. W. R. M. Holroyd.	Punjab
C. Pearson, Esq.	Punjab
J. C. Geddes, Esq., C. S.	Chittagong
M. Macauliffe, Esq., C. S.	Multan
J. E. Cooke, Esq.	Calcutta

HONORARY MEMBERS.

Genl. A. Cunningham.	London
Dr. T. Thomson.	London
A. Grote, Esq.	London
Prof. Bápu Déva Sástri.	Benares

CORRESPONDING MEMBERS.

M. F. H. Foucaux.	Paris
Prof. Holmboe.	Christiania

LOSS OF MEMBERS DURING 1868.

ORDINARY MEMBERS.

By retirement.

Major F. B. Norman.	Calcutta
H. Beverley, Esq.	Calcutta
C. V. Bradford, Esq.	Hooghly
Bábu Bhola Natha Mallicka.	Calcutta
E. T. Trevor, Esq.	Calcutta
J. Christian, Esq.	Monghyr
E. T. Atkinson, Esq.	Jaunpore
The Hon'ble, L. S. Jackson.	Calcutta
C. U. Aitchison, Esq., C. S.	Unrītsur
J. Harris, Esq.	Calcutta
R. A. Sterndale, Esq.	Calcutta
J. H. A. Branson, Esq.	Calcutta
Capt. F. S. Staunton.	Calcutta
A. P. Macdonald, Esq.	Monghyr
J. M. Scott, Esq.	Calcutta
Lient.-Col. B. Reid.	Chamba
Col. J. C. Brooke.	Calentta
G. A. D. Auley, Esq.	Calcutta
A. W. Croit, Esq.	Calentta
Dr. T. Duka.	Simla

By death.

H. D. Robertson, Esq.	Sahárupore
Maulví Maula Bakas. Khan Bahádúr.	Patna
The Hon'ble A. A. Roberts.	Hyderabad
The Hon'ble Prasannakumara Thakura, C. S. I.	Calcutta
C. F. Thornhill, Esq.	Allahabad
S. Fenn, Esq.	Calcutta
F. Hill, Esq.	Calcutta

Struck off.

The Hon'ble R. S. Ellis.	Madras
Máharájáh Satischandra Bahádúr.	Krishnagur
W. H. Scott, Esq.	Dehra
Múnshi Sudderuddin,	Pandoah

PROCEEDINGS
OF THE
ASIATIC SOCIETY OF BENGAL,
FOR FEBRUARY, 1869.

The General Monthly Meeting of the Asiatic Society of Bengal was held on Wednesday, the 3rd February, at 9 o'clock P. M.

T. Oldham, Esq., LL. D., President, in the chair.

The minutes of the last meeting were read and confirmed.

The following presentations were announced.

1. From Bâbu Mâlhavâ Krishnâ Sethâ, a specimen of a fungus from the neighbourhood of Calcutta.

2. From Col. R. E. Oakes, a box of flint implements collected in the neighbourhood of Jubbulpore.

The following letter, addressed to Col. Gastrell, accompanied the donation.

"My attention was first drawn to these relics of past ages, by the late Lieut. Sweeney, of the Bombay Engineers who discovered numbers of them, lying about on the hills and high ground in and around Jubbulpore, and at a little distance below the surface.

"The geological formation of the Jubbulpore Basin has been examined by the Geological Survey of India, and I will, therefore, merely describe, as nearly as I can, the sites on which I have found the greater number of the specimens. They are limited to three or four spots.

"The first and the most prolific bed occurred on the top of the hill north-east of Jubbulpore, at present used as a sanitarium for the Jubbulpore European troops. The flints were scattered about in considerable numbers on the surface; I must have collected some hundreds from this site alone, many of which I afterwards discarded as mere fragments, and very imperfect. They all, however, bore dis-

tinct traces of having been worked by man. The specimens found here were principally the grooved cores and thin splinters. A second site was on the ridge which runs in a north-easterly direction from the above named hill; it is principally composed of limestone, hard and compact. I have failed to find any traces of fossils in the limestone, which I have frequently examined.

“A third site is on the high ground on the base of the granite hills, north and north-east of Jubbulpore. In this place, many good specimens were found, all splinters and grooved cores. On the flat topped hill at the back of the European infantry rifle range, many specimens were found, principally of the knives and chisels, if they may be so called; few if any of the cores were found here.

“On the high ground, west of the Nagpore road, about a mile and a half from the station, many chips are procurable. I have also found specimens in the Seonce district, notably on the high knolls met with on the plain around Lucknadow Rhas.

“Further, on a mound about a mile south-east of Seonee, on the Ruttughee road, and in other parts of the district on the surface soil, lying upon the Trap on the plateaux.

“Many of these implements appear to me precisely similar to some of the specimens in the collection of M. Boucher de Perthes, as illustrated in the diagrams of his most interesting work “Antiquités Celtiques et Ante-diluviennes.” The specimens, therein figured, were all extracted from the drift beds in the vicinity of Abbeville, in the valley of the Somme.

“The account of their discovery and the probable uses of these implements are most ably discussed in the above named valuable work. I regret that I have only one specimen (an imperfect one) which I have retained, of the large axe, commonly known as Celt, of which several excellent specimens have been found in the Jubbulpore district, but all, as far as I know, in the country to the north of Jubbulpore. I have seen these specimens, and could procure drawings or copies in wood, if they would be considered of any value to the Society.

“It is a very remarkable circumstance that these flint implements are, with few exceptions, found lying in masses within a limited area by themselves, and not mixed up with the rough agates from which they have been manufactured. Agate beds are sometimes found near,

but distinctly separate, none of the chips as a rule being found in the rough beds, and but few of the rough agates intermixed with the chipped stones.

"Should this fact be further confirmed by the experience of other collectors, it will tend to indicate very conclusively that the manufactured flints were collected and massed for a purpose."

"*Seonee, January 10th, 1869.*"

The President said, the cores and flakes submitted to the Society, were of precisely the same general character as others which had been more than once met before. One of the interesting facts noticed by Colonel Oakes was, the finding these chips in heaps by themselves, unmixed with the rough agates, out of which they had been formed, and on the other hand none of the chipped flakes were found among the rough agates. Facts of a similar kind had been noticed in Europe also. He (the President) had himself seen in the north of Ireland, where flint implements were commonly found, similar heaps composed of nothing but the chips and fragments of rough flints, with occasionally a half-finished arrow-head, or, some other implements in the heap. These had evidently been the seats of manufacture of these flint-implements; and what were now found were only the rade chips and fragments remaining after the production of the more useful and finished implements found out of these agates, and which had been removed for use.

Mr. W. Blanford said, that Colonel Oakes, had shewn him the localities whence the flakes and cores were derived near Jubbulpore, and had gone over the ground with him. He had since met with similar flakes and cores near Nagpore, as described to the Society in 1867. The quantity occurring near Jubbulpore was astonishing. In reply to a question from the President, Mr. Blanford added, that he had usually found such flakes to be abundant in small restricted localities, frequently on the tops of low rises, where no rolled agates occurred, and in such a manner as to leave it to be inferred that the spot where they were found, was a place used for the manufacture of agate flakes during probably a considerable period; it may perhaps have been the abode of a flake-maker. An instance which occurred in Abyssinia had already been mentioned by him (Mr. Blanford). Around a small granite hill, numerous such flakes of Obsidian were

met with, although none were noticed in the surrounding country, which was entirely composed of granitic rock, so that the Obaidian must have been brought from a distance. Mr. Blanford also mentioned his having found last year a core of black chert, perfectly similar to some of the Central India ones, close to Magdala in Abyssinia.

Col. R. Strachey and Dr. Stoliczka made some further observations in connection with the occurrence of the implements in the north of France and along the Danish coast.

The President said that another similar communication had been received, which may throw some light on the subject under discussion. The Secretary then read the following—

Memorandum on the Cromlechs found in Coorg, by Lieutenant R. E. Cole;—communicated through L. Bowring, Esq., by the Government of India.*

1. The following is the result of further excavations made near Fraserpett. My first researches were made on some high ground, partly covered with bamboos and scrub jungle &c., situated to the right of the road leading to Mysore, and about half a mile from the bridge across the river Kaveri. There were about 500 Cromlechs, occupying a distance of nearly half a mile, showing that there had been a large settlement of the mysterious race of man (of pre-historic man at any rate, as regards our knowledge), regarding whom all our researches and conjectures have been as yet futile.

2. There were 17 of these ancient structures excavated and the dimensions were as follows:—

No.	Length.		Breadth.		Depth.	
	Feet.	Inch.	Feet.	Inch.	Feet.	Inch.
1,	11	3	6	9	3	7
2,	8	3	4	5	0	0.
3,	7	0	4	6	0	0
4,	8	3	6	0	0	0

* This paper was accompanied by several coloured drawings, lithograms and a photograph. The former represent several of the Cromlechs, in shape resembling the one of which a figure was given in the Proceedings for June last. Others were drawings of pottery, in many respects also resembling those published in the Proceedings for August last year.

5,	9	0	5	0	0	0
6,	8	0	6	6	0	0
7,	6	8	4	0	4	3
8,	6	0	3	9	4	0
9,	7	10	3	4	0	0
10,	7	0	3	6	0	0
11,	6	0	4	0	0	0
12,	7	2	2	6	0	0
	6	6	3	5		
13,	7	0	4	6	0	0
14,	7	2	4	8	0	0
15,	10	3	7	6	0	0
16,	8	0	5	8	0	0
17,	3	10	2	4	1	4

Some of these Cromlechs were distinctly visible, whilst others were only traceable by the circles of stones round them, the superincumbent slabs being about a foot or two below the surface of the ground, and often covered over by bamboo clumps and low jungle, shewing that they had not been disturbed by the hand of man for ages past.

3. Some were found without top or side-slabs ; but, in some cases, the granite of which these slabs consisted, was so far decomposed, that it crumbled to dust and could scarcely be traced in the soil. One had no side slabs, but had slabs at each end and at the bottom. Another had no top slab, but the sides and bottom slabs were perfect, and in one end-slab, facing the east, was the segmental aperture which formed the entrance or door, as described in my former reports. This Cromlech was situated within a circle of stones of 25 feet diameter. All the Cromlechs in this locality were within such circles, and some in concentric circles. Again in another the top consisted of 2 large slabs, each one foot thick.

4. The Rev. Mr. Richter, the Principal of the Government Central School, has kindly photographed one of the Cromlechs.† It is within a circle of 14 feet in diameter, consisting of rough unhewn boulders of granite, $3\frac{1}{2}$ feet high, and 2 feet broad. The aperture is 1 foot 7 inches wide by 1 foot 2 inches deep. The top slab is almost on a level with

* Measurement of top slab only.

† Copies of this photograph accompanied the present memorandum.

the bottom of the boulders of rock around it. This fact would distinctly indicate that such a structure could not have been used as a residence, as it must have been flooded by each heavy shower of rain.

5. About a mile to the north of Fraserpett, on the road to Sommarpett, I found a number of Cromlechs ; but most of them had been tampered with, apparently by the wudders for the sake of the slabs. One was 8-9 feet long by $5\frac{1}{2}$ feet broad, and $3\frac{1}{2}$ feet deep. It was within a circle of rough stones of 47 feet in diameter. This is the largest circle I have observed in Coorg. Another was $7\frac{1}{2}$ feet long by 5 feet broad, and 4 feet 2 inches deep. Both of these had segmental apertures facing due east.

6. At Ramasawmi Kunné, about 5 miles to the north of Fraserpett, I found a number of these rude structures, and had four of them excavated. In all these Cromlechs I found similar remains of antique pottery, bones, and pieces of iron. Some of the urns are unique and really beautiful in shape. Mr. Richter has also photographed* groups of the urns, vases, &c. Lieutenant W. Freeth, Assistant Superintendent of the Revenue Survey in Coorg, has also taken drawings of these vessels, and kindly given a sketch-lithogram of them. In the lithograms, submitted with this memorandum, some of the vessels are those found in the Cromlechs situated beyond the bridge, others those which were found near Ramasawmi Kunné. Some of these deserve special notice. The smaller goglets are composed of beautiful black pottery highly glazed or polished. A large round pot with three small tubes, would clearly indicate, that the process of distillation was known to the original constructors of these mysterious structures, or, that these structures have been used by subsequent and different races.

The finding of such a vessel, so different in its use from the Cinerary urns and other vessels generally met with, would again open the question as to whether all such structures were tombs, or whether some were used as residences. It can be said that food, &c., might have been placed for the use of the spirits of the dead ; is it, however, possible that a still was supplied to enable such a spirit (perhaps one of a known thirsty soul), to procure a further supply ; but this is to rush into the regions of fanciful imagination, and as aptly said by a late writer on the

* Copies of the photographs were also sent.

subject : "It is open to the mind to people times about which history is "absolutely silent with men of any race, speech, or social condition, "which it may think good. It is open to conceive, objects of whose "use or origin we have absolutely no record, as being brought into "being for any end, which it may think good."

7. Further from Ramasawmi Kunné, and about half way to Sommarpett, in the very heart of the jungle, I found a few more Cromlechs, and opposite to one, a fallen square pillar, which was covered with an inscription in some character, which neither I, nor any of my officials have been able to decipher as yet. The letters are much obliterated by the action of time; but some would look like old Canarese. I will try and obtain photograms, or impressions taken off the stone, and will submit them hereafter. The inscription is surmounted by an engraved cow and calf.

8. In one of the Cromlechs, in which fragments of bones were found, a portion of the human jaw with two molar teeth in fair condition, was found and forwarded through Mr. Bowring, C. S. I., Commissioner of Mysore and Coorg, to Dr. Oldham at Calcutta, for inspection and comparison. I would also submit a piece of crystal which was found in the Cromlechs at Virajpett, but which was laid and forgotten. It is very hard and slightly cuts glass.

9. One of the urns found in the Cromlechs at Fraserpett was full of paddy, the husk of which was in perfect preservation, whilst the grain itself had completely disappeared. In others I found rāgi.

10. Mr. H. F. Blanford has shewn in his interesting lecture on pre-historic man, that the pottery of the stone-age was rude in form and in material and, that having been moulded by hand, without the aid of the potter's wheel, it was of irregular form and unequal thickness; but the vessels found in the Cromlechs of Coorg are well, some beautifully, shaped and of equal thickness throughout, which would show that they are of a more modern period.

11. The most remarkable Cromlechs I have yet seen in Coorg, with the exception of the double-chambered structure at Virajpett, described in my former reports, are situated in the same direction as those last described, but nearer Sommarpett. There are only four constructed on the rocky summit of a hill, which commands a fine and extensive view all round. These Cromlechs have a circle of

stones round each, but stand out in high relief, and have never been covered with earth or stone. [In the centre of the lithogram, Mr. Freeth has given a sketch of these interesting structures, and I have also the pleasure of forwarding for submission to the Government, colored drawings of the group and of each separately executed by the same officer.]

12. These Cromlechs were quite empty and the largest, measured inside, is 7 feet three inches long, by 6 feet high and 5 feet wide. The superincumbent slab was 11 feet 8 inches long, by 8 feet wide. These Cromlechs were evidently not used as tombs, and I am strongly of opinion that they must have been altars. The sun was the most ancient universal object of idolatrous worship, and the moon also received the early veneration of mankind; and placed as these structures are, in high relief, on the summit of a rocky hill, they would appear fit places for those anniversary fires and sacrifices, in which the earlier races of man delighted.

13. It might be interesting and of use to trace the names by which these monuments of an unknown race and of pre-historic times are known in different parts of India. In Coorg they are called *Pandupárré*, or the stone of the *Pándus*, and also *Pundera mané* or house of the *Pándus*. These two words must not be confounded with each other. The *Pándus* are the descendants of the celebrated five brothers, whilst the *Pundárus* are a legendary pigmy race, who are popularly supposed to have occupied these rude structures. In the Malayalum language, which bears a strong affinity to the Coorg dialect, the term used is *Panduporre*, though such structures have not been found in the Malayalum country. The word *porre* means a small hut; in Tamil *póre* also means a large stone. In the Canarese language these antique structures are often called *Mandávára mané*, derived from the Sanscrit, and signifying the houses of the dead.

The President said that the jaw, alluded to by Lieut. Cole, unfortunately never came to hand. He hoped that it had not been lost in transmission by post, and that it may soon be recovered. The following letter has been received by him (the President) from Mr. Bowring, regarding that gentleman's recent visit to some of the places where numerous Cromlechs are situated.

“ I visited this morning a hill called Móri Betta in the Mólte village, of the Nirata Hóbli of the Yélusávira Shimé Teluk of Coorg, where there are a great many Pán lava Kalla (stores), as the Coorgs call them. The hill in question is about three miles north of Somawárpett, and is of no great height, but covered with low jungle and black rocks. The Cromlechs, if one may so call the stone structures in question, are rather more than 50 in number, facing in various directions, and scattered about at distances of 5 or 10 yards from one another. The photograms which you have seen, give an excellent idea of them, but I may mention that the dislodged stones appear to have been sunk only 2 feet beneath the surface, so that it is improbable that by digging deep under ground, further discoveries would be made. The interiors may be 8 feet by 5, and all of the structures have a rear stone, pierced with a round hole, which would just admit a man's body. One of them, which was in slightly better preservation than the others, appeared to have been surrounded by two small verandahs, - only a yard wide, however,—and at the south two large stones had been erected which had been cut so as to form a rude arch. There were traces of a stone staircase as an approach to this building.

The Coorgs are absolutely ignorant of any past history attaching to these singular structures, but it must be remembered that their own annals do not reach further back than the time, when the first of the Haleri dynasty, who were Lingayuts of the Nugur Division of Mysore and not true Coorgs, began to rule the Province ; 250 years ago. It is indeed probable that the Coorgs were themselves invaders and came from the Malabar side, as I imagine that their habits resemble those of the Nairs of that country. The aborigines were probably the low castes, who still form the mass of the population, over whom the true Coorgs rule in a paternally despotic fashion, which formerly was simple slavery.

It is impossible to form an accurate judgment whether the structures in question were dwelling-places or cemeteries. The people think they were the former, but there is not the slightest trace of smoke on the roofs, which would, I apprehend, have been the case, had they been lived in ; on the other hand, no skeletons, or jars containing coloured ashes, have been found, such pots as have been discovered containing only earth. Some rágí seed, various utensils, such

as I have sent you, and a few rusty implements have been met with. I have requested Captain Cole to get the structure which I have referred to excavated, and to report the result, but I have not much hope of further discoveries of interest being made, while the mud-durs, or stone-cutters, have done their best to demolish the buildings, and, I presume, abstract their contents."

A short discussion followed on the same subject, in which several members took part.

The President then exhibited on the part of Colonel R. Strachey an axe which, he (the President) said, possessed a great resemblance to similar implements found in Europe. The axe had a long curved and sharp edge, gradually attenuating behind into a kind of a straight handle, which has the edges flattened, so as to allow it to be easily used in the hand. The material from which the axe had been made, appeared to be bronze,* and if this was really the case, the implement would be of extreme interest ; it would be the first example of a true bronze weapon of that kind having been found in India. The only remarkable thing is a regular serration, as if it had been made with a file, on one side of the sharp front edge. It would be very interesting to know where the axe was found and under what circumstances.

Col. Strachey stated, the only history he was able to give was, that the specimen was said to have been found somewhere near Jubbulpore, and was given to Mrs. Strachey when passing through that station.

The President thanked on the part of the meeting Colonel and Mrs. Strachey for the opportunity of exhibiting that interesting relic.

The following gentlemen duly proposed and seconded at the last meeting were balloted for and elected ordinary members.

Major W. A. Ross, R. A. (re-elected.)

The Rev. J. P. Ashton.

F. Drew, Esq.

L. Schwendler, Esq.

J. Pickford, Esq.

T. Thomas, Esq.

Sirdar Attar Singh.

* Mr. Tween has since carefully analysed portions of this axe and showed it to be bronze. Its composition is 86.7 parts of copper and 13.3 parts of tin in 100 parts.

Dr. J. B. Baxter.

Bábu Pratapachandra Ghosa, B. A.

The Hon. J. Strachey.

Thákura Giriprasáda Sing.

A letter from A. Anderson, Esq., Fyzabad, intimating his desire to withdraw from the Society, was laid on the table.

The Council reported—that they have sanctioned the publication, in the New Series of the *Bibliotheca Indica*, of an English translation of Sankara's Commentaries of the *Vedánta Sutrā*. The work is to be executed by the Rev. K. M. Banerjea.

Further—that the collection of the MSS. of the *Ruba'iyá i 'Owar Khoyyain* has been completed, and that the work is to be printed in the *Bibliotheca Indica* in one fasciculus.

The President stated, that the Council recommended, that His Excellency the Viceroy be solicited to become Patron of the Society. This office was vacant in consequence of the departure of Sir John Lawrence, who had held it. The usual course was that a deputation of the officers of the Society should wait upon His Excellency, and solicit his acceptance of the post—a course which the Council proposed to adopt on the present occasion—Passed with acclamation.

The President also reported, that the Council recommends the following gentlemen to serve in the several Committees for the ensuing year. The names of the officers are not included in this list, they being *ex officio* members of all Committees.

COMMITTEES FOR 1869.

1.—*Finance.*

Dr. S. B. Partridge.

Col. H. Hyde.

H. F. Blanford, Esq.

2.—*Library.*

The Hon'ble J. B. Phear.

H. F. Blanford, Esq.

W. S. Atkinson, Esq.

Bábu Rajendralála Mitra.

Dr. J. Anderson.

H. B. Medlicott, Esq.

W. G. Wilson, Esq.

A. Pirie, Esq.

3.—*Philology.*

E. C. Bayley, Esq.
 The Hon'ble J. B. Phear.
 The Rev. J. Long.
 C. H. Tawney, Esq.
 Bábú Rajendralála Mitra.
 Moulví Abdullatif Khan Bahádur.
 Bábú Yatindramohana Thakura.

4.—*Natural History [including Physical Science].*

Dr. J. Fayer, C. S. I.
 H. F. Blanford, Esq.
 Dr. T. Anderson.
 Dr. S. B. Partridge.
 W. S. Atkinson, Esq.
 Dr. J. Ewart.
 Bábú Debendra Mullicka.
 H. B. Medlicott, Esq.
 Lieut.-Col. J. T. Walker.
 V. Ball, Esq.
 D. Waldie, Esq.
 Dr. Mohendralála Sircara.
 Dr. J. Anderson.

5.—*Coin.*

E. C. Bayley, Esq.
 Bábú Rajendralála Mitra.
 Col. H. Hyde.
 Major F. W. Stubbs.

6.—*Ethnological.**Linguistic and Physical.*

Dr. J. Fayer.
 Bábú Rajendralála Mitra.
 The Hon'ble W. Markby.
 Dr. J. Anderson.
 Dr. S. B. Partridge.
 Dr. J. Ewart.
 H. F. Blanford, Esq.

7.—*Committee of Papers.*

The Members of the Council.

The President said that he has much pleasure in laying before the meeting the report of the auditors, appointed at the last meeting, to audit the accounts of the Society for the past year. The accounts (see Appendix pp. xvii &c.) have been found correct, and the Society is under great obligation to Messrs. Stewart and Peterson, who had so energetically taken up the work entrusted to them. On the proposition of the chairman a vote of thanks was passed to Messrs. Stewart and Peterson.

The receipt of the following communication was announced—

1. Notes on a short trip into the Patkoi Range, by H. L. Jenkins, Esq.
2. Short Notes of a trip into the hills south of Sibsaugor, by A. C. Peel, Esq.
3. Tabular statement of 30 years' rainfall by Bâbn Gopinâth Sen.
4. A copy of a Journey to Kashgar in 1858, by Captain Valikhânow, translated from the Russian by R. Michell, Esq., F. R. G. S.—From the Government of India, Foreign Department.

The following papers, some of which had been postponed from previous meetings, were then read.

I. *Descriptions of marine shells from Ceylon, &c.*; by Messrs. G. and H. Nevill—communicated by Dr. Stoliczka; (Abstract).

The species described in this paper are of very great interest; they are chiefly small shells which up to this time had perfectly escaped the notice of former observers and collectors in Ceylon. The *Prosobranchiate Mollusca* are represented by a species belonging to the family *Pupuridae*, several small species of *Trochidae* &c., the *Dicrano-branchiate* division by species belonging to the genera *Fissurella*, *Emarginula*, *Macrochisma*, &c. The last forms are always considered to be the rarest shells, and conchological science is greatly indebted to the authors of this paper for their untiring zeal in especially elucidating these as yet little known molluscan forms of our Eastern seas. The fauna of Ceylon will thus receive further additions through the following new species.

Rapana bella, *Clanculus Ceylonicus*, *Euchelus Seychellarum*, *Gibbula Dupontiana*, *G. Blanfordiana*, *Gibb (?) subplicata*, *G. Stoliczka*, *Tellorbis (n. sub-g.) roscofa*, *Pisulina (n. sub-g.) Adamsiana*, *Emarginula papilioidea*, *Em. capuloidea*, *Sub-emarginula Oldhami*.

ans, *Solarium impressum*, *Fissurella scrobiculata*, *Fiss. canalicula*, *Macrochisma scutiformum*. It is to be hoped that figures of all the species can be given to accompany the descriptions.

All the type-specimens described in the paper were exhibited at the meeting.

II. *Notes on the geology and physical features of the Jaintia hills* ; by Captain H. H. Godwin-Austen, F. R. G. S.—communicated by Dr. Stoliczka. (Abstract.)

The geological formations, noticed in the present contribution, in general correspond with those described by the same author in his paper on the geology of a portion of the Khasi hills, (printed in the first number of part II, of the Journal, Asiatic Society, Bengal, for this year.) The oldest rocks exposed are metamorphics of great variety and extent ; they are overlain by sandstones which most probably are of cretaceous age, and in some places contain seams of valuable coal. On these sandstones rest locally nummulitic limestones, sometimes overlain by a very fossiliferous ferruginous rock of still younger tertiary age. Some of these tertiary deposits appear to be the equivalents of the Sivaliks, so well known through their rich fauna of fossil Vertebrata. Special notice is also given of the Nummulitic coal occurring at Lakadong, which is believed to have been formerly worked. Captain Godwin-Austen expresses the hope, that further investigations may bring to light a much larger geographical distribution of the various coal beds.

In the Jaintia district proper granites, quartzitic and trap rocks are, however, of greater extent than the other formations. Among the physical features of the ranges are especially noticed the regular forms and equal heights of the various peaks, and the parallelism of the drainage lines.

Dr. Stoliczka further stated, that there is another interesting paper, by Captain Godwin-Austen, on the list for to-day's meeting ; it treats on some new species of Indian *Diplommatinae*. Since the paper was sent in, the author, however, requested that it may be postponed, wishing to add some more species of the same genus, only very lately discovered in the Cachar hills. There was no more time to bring Captain Godwin-Austen's request before the Council, but the postponement will no doubt be granted, and he would, therefore, defer the reading of the paper.

With reference to the geology of the Jaintia hills, Col. Strachey asked, whether any of the fossils which have been found in the Nummulitic limestones of Assam and the Eastern Provinces of Bengal, were identical with those of the Western Himalaya, as for instance near Subathoo.

Dr. Stoliczka said that of those species of fossils which he had the opportunity to examine from Assam, there were about 80 per cent. of them identical with those found in similar beds in the North-west Himalayas, the Salt-range and Sind. In fact there is a remarkable similarity to be noticed in the fossils of the nummulitic series from India through Persia, Asia Minor, Transylvania up to the Carpathian Mountains. A large number of the same species of *Nummulites*, the same *Conoclypus* and others are met with throughout. There are, however, above the Nummulities in Assam, more recent sandstone beds which contain a perfectly different marine fauna, probably representing similar beds which appear to be more extensively developed in the adjoining province of Burma.

III. *Contributions to Indian Malacology*, No. X.—Descriptions of new species of CYCLOPHORIDÆ, and of the genera *Ennea* and *Streptaxis* from the hills of Southern and South-western India; by W. T. Blanford, Esq., F. G. S. &c., (Abstract).

The new species described are entirely from the hills of the South-western and Southern portion of the Indian Peninsula, and the majority belong to the operculated land shells. The greater number have been discovered by Captain Beddoe, to whom is due almost all that is known of the Mollusca, inhabiting the hill ranges south of the Pulneys. Three species are from the collections made by Rev. Fairbank on the Pulney Hills, from amongst which I have already described two species of *Diplommatina*, both belonging to the group peculiar to the Indian Peninsula.

The first 3 shells belong to a new subgenus of *Cyclophorus* which I propose to call *Ditropis*, from two strong keels which occur in all the species. Some species have more, but all have these two keels, one at the periphery, the other basal, separated by a smooth space. This is of course an unimportant character by itself, though it appears to be constant. The other peculiar characteristics of the type are the vitreous structure and the thick operculum with rough free edges to the whorls externally. The forms appear quite isolated, and although

I doubt, if the characters justify a generic separation from *Cyclophorus*, they certainly shew that the shells belong to a very well marked and peculiar group. All are from the hills on the borders of Travancore.

The next two species appear to me to differ so much from all known forms, that I see no other plan of classifying them, than to found a new genus. They are small turbinate shells with a thick hairy epidermis with strong crenulation inside the mouth. The operculum is very similar to that of the Bornean and Siamese genus *Opisthoporus*, the shell of which, however, is very different, and I am inclined to consider the similarity in the operculum accidental. The peculiarity of the operculum consists in its being hollow, not solid, formed of two thin disks united by a spiral lamina coiled at right angles to their planes, the spaces between the whorls of the lamina being hollow. From this character I propose to call the genus *Mychopoma*. It approaches very closely to *Cyathopoma*, and perhaps should rank as a subgenus, but the structure of the operculum is different. This opercular structure, though, has not the importance, amongst the CYCLOPHORIDÆ at all events, which some naturalists are inclined to attribute to it. Of the two species discovered, one is from the Palney Hills, the other from the frontiers of Travancore.

The next shell is a new *Spiraculum*, the first met with in Southern India. Four or five species are known though some of them are undescribed, from the countries east of the Bay of Bengal, and a few years since I described one discovered by Captain Beddome near Vizagapatam. The present discovery, one of Rev. Fairbank's, shews the existence of another genus with decided Malay affinities in the hill ranges of Southern India.

A few years ago when Sir Emerson Tennant wrote his very interesting work on Ceylon, one of his principal arguments for the distinction of the fauna from that of India was the absence in India of several genera, then believed to be peculiar to Ceylon. Amongst these were *Cataulus* and *Tanalia*. Captain Beddome has now discovered no less than 3 species of *Cataulus* in the hills south of the Nilghiris. One has been described by Dr. Pfeiffer from Captain Beddome's specimens, two of which found their way in Mr. Cuming's rich collection, now in the British Museum; a second from the ranges on the frontier of Travancore I now describe, and I have heard from Captain Beddome

of his discovery of a 3rd species. Rev. Fairbank has re-discovered the peculiar *Tunalia stomatodon* of Mr. Benson in the Pulney hills, and the operculum shews that the species really belongs to the genus to which it was, with some doubt, assigned by Mr. Benson. *Aulopoma* amongst the operculated land-shells, and *Acavus* amongst the *Helices* are the only Ceylonese forms still not known to be represented in Southern India.

Captain Beddome has also discovered a third Indian species of *Opisthostoma* in the Wynaad, and this very curious form is much larger than the two previously discovered, and even than the singular Lubuan *O. Cespigni*, H. Ad. The other shells described are a species of *Eunea* allied to *E. Perriei*, Pir., from the Pulney hills, and a new and curious *Streptaxis* from Canara.

IV. *Notes on the Burmese route from Assam to the Hookoong-valley*, by H. L. Jenkins, Esq.,—communicated, through H. Goode-nough, Esq., by the President. (With a map).

Wishing to satisfy myself as to the practicability of opening out the old *Burmese route from Assam into Upper Burmah, I started on the fifteenth of last month from Makoom, the last outpost in that direction, and travelled along the old path as far as lake Nonyang, on the south side of that Patkoi range. The following notes of the trip may perhaps prove interesting to persons connected with Assam.

15th December.—Started from Makoom in the morning. There is no road eastwards or southwards beyond this point, except the natural bed of the Dehing river. It is necessary to cross the river at every bend. This is not difficult at this time of the year. There is not more than two or three feet of water at the outside. Encamped at night at the mouth of the Terap river.

16th.—Continued to travel up the bed of the Dehing and camped at night at a small Singfoo village, a short distance below the Kerrempani, an affluent of the No Dehing river.

17th.—Reached the new Beesa of the maps. Bunka, the most influential chief of the Assam Singfoos lives here. He accompanied me across the Patkoi.

18th.—Camped at night at the mouth of the Dion-pani, another affluent of the No Dehing.

* See Wilcox's Survey Maps.

19th.—Continued up the Dehing and camped at night at the mouth of the Namchik river.

20th.—Above the confluence of the Dehing and Namchik rivers, the main river is called Namroop. This day we travelled up the Namroop, and camped a little below Sunkaph Purbut.

21st.—Continued up the Namroop, which here runs through a narrow gorge between Sunkaph Boom* and Miting-koo. Camped at night at the mouth of a small stream called Namgoi.

22nd.—As I found much time was lost in dragging my two small canoes over the rapids, I resolved to leave them behind, and loading my baggage on my elephants marched up the stream of the Namroop, till I reached the Namphook village, which consists of eight Singfoo houses.

23rd.—As this was the last village I should see, it was necessary to lay in a stock of provisions. This day was spent in bargaining for rice and in arranging with the able-bodied men of the village to accompany me as guides. I had some difficulty in arranging with these men. It was necessary that they should consent to act as porters if required; and Singfoos have a particular objection to carrying loads for other persons.

24th.—Started from Namphook village, course due south across the Namroop over some hilly land, covered with forest, two hundred feet higher than the bed of the river. After a two hours' walk, we came again on to the Namroop and waded up its stream till the evening, leaving the bed of the stream now and then at the bends of the river, in order to keep as straight a course as possible. Both banks of the river were covered with a forest of immense timber trees, and underneath the larger trees was a rank growth of jungle through which we could not have made our way, except for the tracks of wild elephants. Along these tracks, when it was necessary to leave the bed of the river, we could walk, and with a little cutting of the creeping and climbing plants, the ponies could be made to follow very well, but the tracks were neither high enough nor broad enough to admit of elephants with their loads passing along them, so I sent back my elephants to the village taking on as little baggage as possible, partly carried by the Singfoos and partly by the ponies. The Namroop was for the

* In Singfoo, boom is a mountain, keo a hill.

most part shallow, but occasionally we came on deep pools of very clear water. The quantity of fish* in these pools is astonishing. The Singfoos speared a great number during the daytime. Camped at night on the banks of the Namroop.

25th.—Continued our march up the Namroop, much in the same manner as on the previous day. Striking occasionally into the jungle to avoid going out of our course which was still south, until we reached the mouth of a small stream, called Nambong, when we left the Namroop and waded up the Nambong to the mouth of a still smaller stream. Up this latter stream, the Nunkee, we travelled till evening and encamped on its banks. The country during the early part of the day was undulating and gradually became hilly. The principal rock was a soft blue slate. Occasionally a thin seam of sand-stone appeared. The strata were faulty and in some places very much disturbed.

26th.—Continued to wade up the Nunkee with slow uncertain steps, for the bed of this stream is composed of large round slippery boulders. After travelling about an hour up the stream, we left it and commenced the ascent of the Patkoi, by a narrow and not very well marked path. The ascent was not steep, the ponies had no difficulty except when we came to a fallen tree or some other obstruction caused by the living jungle. The path was very nearly straight, there was hardly any attempt to lessen its steepness by altering the direction. As we ascended, the forest trees seemed to improve in size and the undergrowth of jungle to be less thick. Of the timber trees common to Assam, I particularly noticed the Sam† and the Mekahi. These trees average at least twelve feet in girth, and the latter grows to the height of sixty to seventy feet without a branch. On the summit I found a good deep soil covered with bamboos, canes, and forest trees growing luxuriantly, but not so rankly as in the plains below. Many of the plants and trees were common to the plains, others were new to me, particularly a cane bearing an edible fruit, which I do not recollect having seen before. I found the Tea plant abundant on both sides, but more plentifully on the southern than on the northern slope.

* If this route is opened out, the immense quantity of fish in all these rivers may prove of economical importance. The most numerous are *Cyprinus* (*Labeo*) *dyocheilus*, *Barbus macrocephalus* and *Barbus hexagonolepis*.

† *Artocarpus chaplasha*.

The Singfoos gathered the leaves and commenced to prepare tea after their own fashion. They told me that tea was to be found in the jungle near any spot where there had formerly been a Shan or Singfoo settlement.

As far as I could see, there is a depression in the Patkoi range at this point, and it is to be supposed that the Burmese would not have selected this for their main route to Assam, unless it had possessed considerable advantages over every other path.

The present path rises probably from 2,500 to 3,000 feet, but to cross the range with a road, it would certainly not be necessary to rise more than 2,000 feet.

On the Assam side I could see little but the tops of the hills below me, on account of a heavy fog, but southward the air was clear and I had a very fine view of the country. The most striking object on the Burma side is a large open plain dotted with a few trees, some eighteen or twenty miles long by seven or eight broad. At the western end of this plain, and almost immediately beneath the Patkoi is an open sheet of water, perhaps three miles long and exceeding a mile in breadth called Nonyang* by the Singfoos. The lake stretches nearly from east to west. It contains a triangular shaped island near its south-east extremity where its waters are drained off by a small stream called Loglai which running southwards falls into the Sooroong, and this latter river falls into the Denai or Kyundween of the maps. The Kyundween, it is well known, falls into the Irrawady, or Milee, as the Singfoos call the great river below Ava.

After examining the lake and satisfying myself that its waters did run southwards through the Loglai, I returned to the top of the Patkoi and encamped there. I was anxious if possible to get a view of the Assam side, so as to gain some idea of the best line of road to Makoom.

The nearest of the Hookoong villages are on the banks of the Sooroong, lying under a hill called Gadak which was pointed out to me and which appeared to be about twenty-five miles south of Nonyang, as the crow flies. In the evening two Singfoos came into our camp from these Sooroong villages, and I learnt with surprise that they had slept two nights on the road since they left their homes.

* Now, a lake; *yang*, the name of a Shan chief, who held this post for the Burmese.

They had travelled up the bed of the Sooroong and then up the Leglai. The devious course of these streams, and the difficulty of wading over shingle and boulders, must account for the slow progress made.

The villages on the Sooroong, they informed me, did not number more than fifteen houses and that very little rice would be procurable. From their villages to the Denai is a two days' march through forest. They described the country on each bank of the Denai as well cultivated and thickly populated. From the Patkoi to the Denai, the path did not lie over any steep hills.

The Singfoos who accompanied me, had only agreed to take me as far as Nonyang, and I failed to induce them to go further south with me. It was their busiest time of the year. The only crop they grow was being reaped, and they could not afford to lose any more time in securing it.

It will be seen that the only difficulties to be encountered on the road between Assam and Hookoong are caused by the denseness of the jungle. The intervening country is a wilderness consisting of a forest of many useful timber trees of immense size. Below the larger trees is a tangled mass of smaller plants, most of them climbers twisting about the larger trees and wrestling with each other in an intense struggle for life. The only paths by which man can move are the natural beds of rivers or mountain streams. It would be impossible to leave these channels, except for the tracks made in the jungle by herds of wild elephants. Progress along such paths is very slow, and the distance to be travelled very much increased, owing to the necessity of often following the windings of the streams.

The Burmese government in former days took care that there should be a village, or rather a military settlement, every twelve or fifteen miles along the route, and it was the business of the people, living at these stations, to cut the jungle occasionally, and to remove fallen trees and other obstructions from the path. The route has now fallen almost entirely into disuse on account of the posts having been one by one deserted since August last. Only three trading parties have come this way from Hookoong into Assam. Traders now usually travel by a more circuitous and very difficult path through the Naga hills, passing from one Naga village to another, so as to

obtain supplies. It is to be wondered at that the Namroop route should be used at all by traders, considering that each man must carry fifteen pounds weight of rice for his own consumption on the journey, besides his load of goods; but the Moolooks, Singfoos and Dooannahs are not hill men, and to avoid climbing the steep scarps which the Patkoi presents at every other point, they form dépôts of provisions along this route much in the same manner that the later Arctic explorers have adopted in their expeditions on the ice. They carry forward rice and bury it at convenient intervals along the road, and then return for their loads. What is wanted is about ninety miles of road from Makoom to the Kyundween. There is a sufficient amount of Naga and Dooannah labour to be obtained in the neighbourhood for the construction of an ordinary "cutcha" road, and the cost of it would not exceed one thousand Rupees per mile. Such a road would enable the trader from Hookoong to reach Makoom in one-third the number of marches that the journey now occupies, and it would render an examination of the country easy, and thus pave the way for a more scientifically constructed road, or a Railway.

On my return I fell in with a party of eight men returning to Hookoong. They had brought over amber ornaments, ivory and daos for sale. Two of the party were taking back about thirty yards each of the poorest description of calico* and another had some sulphur. The rest had invested in opium.

These men assured me that there was more than one well used trade route through Hookoong, and through the Sepahee Singfoo country, to Tali and other places in Western China. The question of opening up China to India is of so great importance, that it is not likely to be lost sight of, now that it has once attracted attention, but the magnitude of this subject should not make us pass over the value of improving the communication between the Burhampooter and the Kyundween. The great want of Assam is population to cultivate the soil. We can obtain labourers from Bengal, but we have also to great extent to import their food and this in a notoriously fertile country.†

* I am not sure about the name of this cloth. It is composed chiefly of starch with a small portion of cotton to give toughness to the fabric. It is never seen in any civilised place, but the Manchester manufacturers know well how to suit savage customers who must have cheap clothing, and do not wash their clothes.

† The ground is cropped year after year and no manure is used, yet the yield is on the average about 45 cwt., of paddy to the acre.

That Bengalis have not settled to any extent in the province, is no doubt a good deal owing to the illiberal policy of Government with respect to the selling or leaving of wastelands, but it is also in part owing to the fact that the climate does not suit most Bengalis on their first arrival in the province. If Assam is to be re-populated, it will be from the East. That the existing population has been mainly derived from this quarter, is shewn by the language, customs, and physical appearance of the people. At the present time, the Phakial Docanniah and Singfoo population is increased annually to a small extent by the influx of emigrants from Hookoong and the Shan states. That people do not come in greater numbers is, I believe, entirely owing to the hardships that persons, reared in a cultivated country and unaccustomed to the jungles, must encounter on the road. It is said that numbers of persons who leave Hookoong for Assam never arrive here. They lose the path and wandering about in the jungles starve to death, or are killed by wild animals. I do not know what difficulties there would be in obtaining a right of way from the Burmese government, but through considerably more than half the distance the road would lie in British territory, and the opening up of a road only as far as the watershed of the Patkoi would prove of no small value to the province.

Debroughur, 12th January, 1869.

The Chairman said, Mr. Jenkins' notes just read, were very interesting and valuable, as bearing on the geography of a part of a country, almost entirely unknown. Even so lately as last year, Mr. Cooper, whose adventurous journey in China they had all been interested in, when speaking of the routes leading to Assam, &c., from the western part of China, notices this Patkoi range, as being something very difficult to cross, and as being still a great barrier to be overcome, supposing the intervening country had been passed. Mr. Jenkins now shows that in a trip of only a few days, and without any real difficulty or danger, and without a greater ascent than (by estimation) 3,000 feet, he had been able to cross the same Patkoi range, and to get down on the Burmese or Chinese slope. Mr. Jenkins also thinks that if a path or road were opened out, it would not be necessary to go over greater elevation, than probably 2,000 feet. The question of the source from which a removal of the population of Assam is to be sought, is a not unimportant one; and it does

seem probable, that considerable immigration from Burma might be looked for, if an easy means of communication were opened out. Mr. Goodenough, who had been good enough to forward to him Mr. Jenkins' notes, had also sent him a sketch map, on which he had marked Mr. Jenkins' route; and on which he had also shewn the routes of Wilcox, of Griffiths, of the recent expedition under Capt. Sladen to Momein, of the French expedition which had recently completed its course at Shanghai; and also the furthest point to West, to which Capt. Blakiston had reached. This general map would give an idea of the relative position of the areas explored by these expeditions, and would also shew the large area of country, the geography of which was still very little known. It was scarcely creditable to the British Government that this should be so; and every little addition to our knowledge of the geography of this area was very acceptable. He thought they owed their best thanks to Mr. Jenkins and Mr. Goodenough, for the communication of these notes.

The reading of Mr. Peel's paper *on the hill tribes south of Sibsaugor*, was postponed for the next meeting.

Col. Strachey then spoke of a remarkable stroke of lightning during the recent storm; a house having been struck, apparently from the side, on the corner opposite to the one the conductor was placed at. This was probably owing to the moisture with which the walls of the house were saturated. The fact does not, however, speak very favorably for the use of our lightning conductors.

The Chairman announced the new election of members and the meeting separated.

LIBRARY.

The following additions were made to the Library, since the meeting held in January.

Purchase.

The Annals and Magazine of Natural History, Vol. II. Nos. 1 and 2.

The Calcutta Review, January, 1869.

The Numismatic Chronicle, 1868, Part III.

Revue linguistique, 2nd tome, fasc. 2nd.

Exchange.

The Atheneum, October and November, 1868.

[APPENDIX.]

ABSTRACT STATEMENT
OF
RECEIPTS AND DISBURSEMENTS
OF THE
ASIATIC SOCIETY OF BENGAL
FOR
THE YEAR 1868.

STATEMENT
Abstract of the Cash Account

RECEIPTS.	1868.	1867.
ADMISSION FEES.		
Received from the New Members, Rs. 1,280 0 0	1,280 0 0	1,504 0 0
CONTRIBUTIONS.		
Received from the Members, ... 9,771 12 0	9,771 12 0	8,873 18 6
JOURNAL.		
Sale proceeds and Subscription to the Journal of the Asiatic Society, ... 1,303 5 0		
Ditto ditto 27 copies of Total Eclipse, 13 8 0		
Refund of Postage Stamps, ... 28 10 0		
Ditto of Packing Charges, ... 1 8 0		
Ditto of Freight, ... 5 4 0		
Commission received from the Baptist Mission Press on the bills of the Journal, &c., ... 72 15 3	1,425 2 3	2,820 5 9
LIBRARY.		
Sale proceeds of Books, ... 412 3 6		
Refund of Freight, ... 15 4 0		
Ditto of Postage, ... 2 4 0		
Sale proceeds of two large Book Shelves, 50 0 0	479 11 6	437 10 0
SECRETARY'S OFFICE.		
Refund of Freight, ... 7 8 0		
Ditto of Postage, ... 7 10 0	15 2 0	17 5 9
GENERAL ESTABLISHMENT.		
Savings, ... 0 15 3		
Fine, ... 0 12 0	1 11 3	1 4 6
VESTED FUND.		
Received interest on the Government Securities from the Bank of Bengal, 110 0 0	110 0 0	110 0 0
COIN FUND.		
Proceeds of sale of duplicates, ... 36 0 0	36 0 0	8 8 0
MUSEUM.		
Refund of the amount paid for the furnitures, ... 280 0 0	280 0 0	
INEFFICIENT.		
Refund of the amount from Dr. Jerdon, paid by the Assistant Curator Baboo for Sundries Charges, ... 48 8 0	48 8 0	
Carried over, Rs. 13,447 7 0		

No. 1.

of the *Asiatic Society* for 1868.

DISBURSEMENTS.

1868. 1867.

CONTRIBUTIONS.

Paid Commission on collecting subscription bills,	Rs.	50	5	3	50	5	3
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JOURNAL.

Freight,	...	134	14	6			
Printing charges,	...	6,446	11	8			
Lithographing and Engraving charges, &c.,	...	603	0	0			
Purchase of Postage Stamps,	...	204	1	0			
Commission on Sale of Books,	...	89	8	3			
Purchase of Journal,	...	307	0	0			
Ditto of Blank Books,	...	9	4	0			
Ditto of Stationery,	...	3	0	0			
Refund of packing charges,	...	2	11	0			
Colouring of the Maps,	...	44	9	0			
Petty charges,	...	12	13	9			
		7,807	8	9	4,849	7	6

LIBRARY.

Salary of the Librarian,	...	840	0	0			
Establishment,	...	120	0	0			
Book-binding,	...	206	1	0			
Commission on sale of Books,	...	48	11	0			
Purchase of Books,	...	1,468	6	0			
Ditto of Custom Receipt Stamps,	...	2	0	0			
Freight,	...	5	0	0			
Salary of a Punkhaman,	...	27	14	9			
Printing charges,	...	20	0	0			
Purchase of Stationery,	...	4	0	0			
Proportional Exchange on bill of £150,	...	47	9	8			
Landing charges,	...	17	6	9			
Petty charges,	...	23	7	9			
		2,830	8	11	3,807	5	6

SECRETARY'S OFFICE.

General Establishment,	...	294	0	0			
Secretary's Office Establishment,	...	1,344	0	0			
Purchase of Postage Stamps,	...	116	1	0			
Ditto of Stationery,	...	51	13	0			
Ditto of Paper files,	...	14	8	0			
Ditto of Directory and Army List,	...	25	0	0			
Printing charges,	...	122	8	0			
Binding Gazettes,	...	31	8	0			
Bearing Postage,	...	6	2	6			
Subscription to the Medicoal Gazette,	...	12	0	0			
Petty charges,	...	20	5	6			
		2,037	14	0	1,633	6	7

Carried over, Rs. 12,726 4 11

RECEIPTS. 1868. 1867.

Brought over, Rs. 13,447 15 0

O. P. FUND.

Received in part of £63-5-8 advance on bill of Messrs. Williams, and Norgate on account of White Yajur- veda, ...	200 0 0
Ditto by Transfer from Messrs. Williams and Norgate, Sale proceeds of Biblio- theca Indica through them, ...	276 13 6
	489 12 8 165 10 11

MESSRS. WILLIAMS AND NORGATE.

Received by Sale proceeds of their Books, ...	2 8 0
Ditto from Sayyid Karamut Ali, as deposit on their account being the price of a number of the Kamil, ...	3 0 0
Ditto by Books supplied to the Asiatic Society, ...	1,370 12 0
Ditto of Postage for sending various letters, ...	1 10 0
Ditto of Freight for ditto ditto Journal,	21 1 6
Ditto by Transfer to the O. P. Fund for the White Yajurveda, ...	632 13 6
Ditto by ditto to Babu Prosono Coomar Tagore, for distributing Packets of Books in London, ...	12 8 0
Ditto by ditto to Babu Rajendralal Mitra, for, ...	6 0 0
Ditto on £150, ...	82 6 8
	2,132 11 8 299 12 0

GOVERNMENT NORTH WESTERN PROVINCES.

Refund of Freight paid for sending Journal and Proceedings, ...	10 14 0
	10 14 0 14 8 0

INDIAN MUSEUM.

Refund of the amount advanced, ...	14 8 0
	14 8 0

BOPP STIFTUNG FUND.

Received on deposit, ...	213 0 0
	213 0 0

BAPTIST MISSION PRESS.

Received from Moulvie Abdoolateef, for charges of, ...	3 0 0
	3 0 0 52 8 0

MAJOR J. F. TENNANTS.

Refund of the amount paid on the 11th July, 1868, ...	6 0 0
	6 0 0

MR. A. GROTE, PORTRAIT FUND.

Received on deposit, ...	967 0 0
	967 0 0

DR. J. F. N. WISE.

Refund of the amount paid on the 31st October, 1866, ...	0 12 0
	0 12 0

Carried over, Rs. 17,285 9 4

DISBURSEMENTS. 1868. 1867.

Brought over, Rs. 12,726 4 11

VESTED FUND.		
Commission to the Bank of Bengal for drawing interest on the Government Securities, ...	...	0 4 4
		<u> </u>
		0 4 4
COIN FUND.		
Purchase of Coin, ...	...	331 0 0
Ditto of a Blank Book, ...	...	7 8 0
Banghy expenses for returned Coins, ...	...	0 15 0
Petty charges, ...	...	0 8 0
		<u> </u>
		839 15 0
		417 14 6
BUILDING.		
Assessment, ...	...	432 0 0
Ditto for lighting, ...	...	96 0 0
Police Rate, ...	...	144 0 0
Repairing, ...	...	112 9 0
Paid to the Justices of the Peace for constructing 3 Gully pits, &c. for drainage, ...	...	351 15 3
		<u> </u>
		,136 8 3
		653 8 0
MISCELLANEOUS.		
Salary of the Mally, ...	...	57 0 0
Printing charges, ...	...	33 0 0
Meeting charges, ...	...	162 0 0
Advertising charges, ...	...	212 9 0
Purchase of 2 Lamps, ...	...	63 0 0
Ditto of Receipt Stamps, ...	...	2 0 0
Ditto of Stationery, ...	...	1 0 0
Petty charges, ...	...	46 11 0
		<u> </u>
		577 4 0
		297 0 3
O. P. FUND.		
Paid to the Asiatic Society on account of Loan, ...	...	183 5 6
Ditto ditto Baptist Mission Press, for printing charges, ...	...	5 0 0
Ditto Messrs. Wil- liams and Nor- gate, for pur- chase of White Yajurveda, ... £50 12 6 506 4 0		
Ditto ditto ad- vertising Bibli- otheca Indica,.. £20 18 0 9 0 0		
Do. do. Freight and Packing for distributing Bi- bliotheca Indi- ca, ... £11 15 2 117 9 6		
	<u> </u>	<u> </u>
	£63 5 8	632 13 6
Do. proportional Exchange on a bill of £150, ... 34 13 0		
		<u> </u>
		667 10 6
		856 0 0
		45 13 9

Carried over, Rs. 15,636 4 6

	RECEIPTS.	1868.	1867.
	Brought over, Ra. 17,285	9 4	
V. BALL, Esq.			
Refund of the amount paid on the 12th September, 1868, ...	1 0 0	1 0 0	
K. ROGHUNATH Row.			
Refund of the amount paid on the 31st August, 1868, ...	1 0 0	1 0 0	
W. IRVINE, Esq.			
Refund of the amount paid, ...	11 4 6	11 4 6	
D. WALDIE, Esq.			
Refund of the amount paid on the 6th July, 1868, ...	9 2 0	9 2 0	
E. T. ATKINSON, Esq.			
Refund of the amount, ...	1 0 0	1 0 0	
Da. BHAU DAJI.			
Received on deposit, ...	12 8 0	12 8 0	
Lt. J. BUTLER.			
Refund of the amount paid on the 31st October and 21st December, 1867, ...	4 7 0	4 7 0	7 8 0
JAMES BEAMES, Esq.			
Refund of, ...	7 8 0	7 8 0	
BABU RAJENDRALALA MITRA.			
Refund of the paid on the 16th July, 1867, ...	11 0 0	11 0 0	
DR. F. STOLICZKA.			
Refund of the amount paid on the 12th September, 1868, ...	1 8 0	1 8 0	
E. B. COWELL, Esq.			
Refund of the amount paid, ...	106 4 0	106 4 0	
CAPT. M. W. CAW.			
Received on deposit, ...	1 11 0	1 11 0	
COL. R. STRACHET.			
Refund of the amount paid, ...	10 0 0	10 0 0	
J. D. TREMLETT, Esq.			
Refund of Postage Stamps, ...	0 2 0	0 2 0	
Dr. J. MUIR.			
Received in deposit, ...	1,000 0 0	1,000 0 0	
	Carried over, Ra. 18,463	15 10	

DISBURSEMENTS. 1868. 1867.

Brought over, Rs. 15,636 4 6

MESSRS. WILLIAMS AND NORRAGE.

Paid Messrs. Gillanders, Arbuthnot and Co., as per draft, dated 8th July, 1868, £150, at 1-10 $\frac{1}{2}$ per rupee, ...	1,582 6 8
Ditto by transfer to sale of Journal, ...	78 12 0
Ditto ditto of Library, ...	17 15 6
Ditto ditto of Bibliotheca Indica, (O. P. F.) ...	276 13 6
	1,955 15 8
	448 12 0

GOVERNMENT NORTH-WESTERN PROVINCES.

Paid Freight for sending Journal and Proceedings, ...	16 5 0
	16 5 0
	10 14 0

INDIAN MUSEUM.

Paid Freight for sending a parcel of Books to Messrs. Williams and Norrake, London, ...	1 12 0
	1 12 0
	12 12 0

BORN STIFTING FUND.

Paid advertising charges, ...	4 14 6
Ditto Postage Stamp for sending Circular, ...	4 12 6
Refunded the amount to Babu R. Mitra, ...	203 5 0
	213 0 0

BAPTIST MISSION PRESS.

Paid to the Press, for printing charges on account of the Hon'ble Campbell, ...	47 8 0
	47 8 0
	5 0 0

MAJOR J. F. TENNANTS.

Paid Printing charges on 75 copies of Total Eclipse, ...	6 0 0
	6 0 0

MR. A. GROTE, PORTRAIT FUND.

Paid Postage Stamps, ...	15 14 0
Ditto 200 Creamlaid Envelope, ...	1 12 0
Ditto 16 Receipt Stamps, ...	1 0 0
Ditto printing charges 150 copies of Circulars, ...	12 0 0
Refunded the amount to Babu R. Mitra, ...	936 6 0
	967 0 0

ZOOLOGICAL GARDEN.

Paid printing charges, ...	16 0 0
	16 0 0
	1 14 0

MUSEUM CATALOGUE.

Catalogue binding, ...	18 0 0
	18 0 0
	754 2 9

V. BALL, Esq.

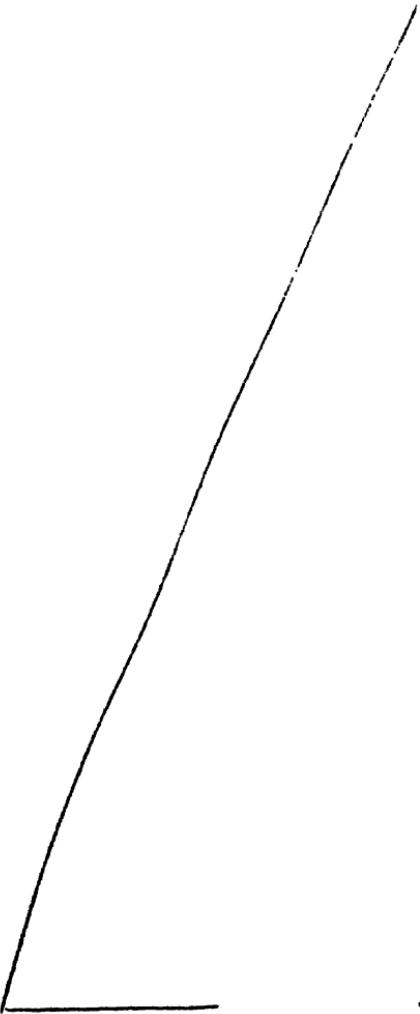
Paid to the Baptist Mission Press for printing charges, ...	1 0 0
	1 0 0

Carried over, Rs. 18,878 13 2

RECEIPTS.

Brought over, Rs. 18,463 15 10

BABU KEDARNATH BANERJEE.	
Received from him on account of the	
Library Books Sale, ...	... 7 0 0
	7 0 0
W. T. BLANFORD, ESQ.	
Refund of the amount paid,	... 6 0 0
	6 0 0



Carried over, Rs. 18,476 15 10

DISBURSEMENTS. 1866. 1867.

Brought over, Rs. 18,878 13 2

K. ROGHUNATH Row.			
Paid packing charges, ...	1 0 0	1 0 0	
D. WALDIE, Esq.			
Paid to the Baptist Mission Press for printing charges, ...	9 2 0	9 2 0	
JAMES BEAMS, Esq.			
Paid Freight for sending Books to Monghyr, ...	1 1 0	1 1 0	3 2 0
BÁBU RAJENDRALÁLA MITRA.			
Paid to the Baptist Mission Press, for printing charges, ...	11 0 0		
Do. to Messrs. Williams & Norgate, ...	6 0 0		
DR. F. STOLICZKA.		17 0 0	
Paid to the Baptist Mission Press, for printing charges, ...	1 8 0	1 8 0	
THE HON'BLE G. CAMPBELL.			
Paid to the Baptist Mission Press, for printing charges, ...	5 0 0	5 0 0	
W. L. WILSON, Esq.			
Paid Postage for sending Library Books, ...	0 7 0	0 7 0	
MAJOR C. H. STRUTT.			
Paid Postage Stamps for sending Journal, ...	2 6 0	2 6 0	
DR. G. KING.			
Paid Postage Stamps for sending Extra Copy and Chart, ..	0 6 0	0 6 0	
R. B. SMART, Esq.			
Paid Postage Stamps for sending Chart, ...	0 2 0	0 2 0	
LT. J. FORSYTH.			
Paid discount for Cashing 2 Bombay Currency Notes, ...	0 6 0	0 6 0	
DR. J. M. FLEMING.			
Paid Postage Stamps for sending Chart, ...	0 3 0	0 3 0	
DR. G. W. CLINE.			
Paid Postage Stamps for sending a Copy of Rules of the Asiatic Society, ..	0 3 0	0 3 0	
G. SHELVERTON, Esq.			
Paid discount for Cashing his draft, ...	0 5 9	0 5 9	

Carried over, Rs. 18,917 14 11

RECEIPTS. 1868. 1867.
Brought over, Rs. 18,476 15 10

Carried over, Rs. 18,476 15 10

DISBURSEMENTS. 1868. 1867.

Brought over, Rs. 18,917 14 11

H. R. CARNAC, Esq.		
Paid discount for Cashing his draft,...	0 6 0	0 6 0.
MAJOR-GENERAL A. CUNNINGHAM.		
Paid to the Baptist Mission Press, for printing charges, ...	2 0 0	2 0 0
SIR WILLIAM JONES' MONUMENT.		
Refunded the amount to Messrs. Llewelyn and Co., for repairing the Monument, ...	680 0 0	680 0 0
DR. T. ANDERSON.		
Paid to the Baptist Mission Press, for printing charges, ...	5 8 0	5 8 0
C. HORNE, Esq.		
Paid to the Baptist Mission Press, for printing charges, ...	7 2 0	0 7 0 0 7 0
THE REV. M. A. SHERRING.		
Paid to the Baptist Mission Press, for printing charges, ...	2 10 0	2 10 0
H. BLOCHMANN, Esq.		
Paid to the Baptist Mission Press, for printing charges, ...	3 12 0	
Ditto Freight for sending Books to Messrs. Williams & Norgate, London,	2 0 0	5 12 0
THE REV. W. G. COWIE.	*	
Paid to the Baptist Mission Press, for printing charges, ...	6 6 0	6 6 0
DR. A. M. VERCHERY.		
Paid Postage Stamps for sending Library Books, ...	1 2 0	1 2 0
M. MACANLIFFE, Esq.		
Paid Postage for sending Researches, Vol. 15, ...	0 3 0	0 3 0
BABU PROSENJO COOMAR TAGORE.		
Paid Messrs. Williams & Norgate, for distributing packets of Books in London, ...	12 8 0	12 8 0
MUMLIE ARDOOLLATEEF.		
Paid to the Baptist Mission Press, for printing charges, ...	1 8 0	1 8 0
W. T. BLANFORD, Esq.		
Paid to the Baptist Mission Press, for printing charges, ...	6 0 0	6 0 0

Carried over, Rs. 19,648 15 11

RECEIPTS.	1868.	1867.
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Brought over, Rs. 18,476 15 10

BALANCE OF 1867.
In the Bank of Bengal, ...
Cash in hand, ...
* ...

... 3,487 12 1	
... 38 8 4	
	—————
	3,526 4 5

Rs. 22,003 4 8

Examined,
Sd. PRATAPACHUNDEA GHOSHA,
Asst. Secy.
Asiatic Society, Bengal.

Errors and Omissions excepted,
Sd. BUDDINATH BISACK,
Cash Keeper,
Asiatic Society, Bengal.

and found correct
Sd. R. D. STEWART, } Auditors.
" F. W. PETERSON. }

DISBURSEMENTS.	1868.	1867.
Brought forward, Rs. 19,648 15 11		

BALANCE.
In the Bank of Bengal, viz.,
Account-current Dr. J.

Muir, ...	1,000 0 0	
" Asiatic So- ciety, ...	1,261 10 9	
	—————	2,261 10 9
Cash in hand, ...	... 92 9 7	————— 2,354 4 4
		Rs. 22,003 4 3

Examined, Sd. PRATAPCHUNDRA GHOSH, Asst. Secy.	Errors and Omissions excepted, Sd. BUDDINATH BYSACK, Cash Keeper,
Asiatic Society, Bengal.	Asiatic Society, Bengal.

Examined and found correct,
Sd: R. D. STEWART, }
F. W. PETERSON. } Auditors.

STATEMENT
Abstract of the Cash Account

	RECEIPTS.	1868.	1867.
ORIENTAL PUBLICATIONS.			
Received by Sale of Bibliotheca, ...	Rs. 2,268 12 0		
Ditto by Subscription to ditto, ...	102 2 0		
Ditto by Sale of White Yajurveda, ...	456 14 3		
Ditto by Sale of Samaveda, ...	24 8 0		
Ditto by Sale of Athurveda, ...	82 8 0		
Refund of Postage Stamps, ...	47 7 0		
Ditto of Packing charges, ...	6 2 0		
Ditto of Freight, ...	0 2 0		
	—	2,938 7 3	2,558 12 9
GOVERNMENT ALLOWANCE.			
Received from the General Treasury at 500 Rs. per month, ...	... 6,000 0 0	6,000 0 0	6,000 0 0
VESTED FUND.			
Received Interest on the Government Securities from the Bank of Bengal, ...	346 4		
Ditto by Sale of Government Security, ...	3,500 0		
Ditto Premium by Sale of ditto, ...	529 6		
Ditto Interest by Sale of ditto, ...	34 12		
	—	4,410 6 1	412 8 0
CUSTODY OF ORIENTAL WORKS.			
Saving of Salary, ...	... 14 7 6	—	14
ASIATIC SOCIETY OF BENGAL.			
Received on Loan, ...	... 183 5 6		
Ditto by transfer on account of White Yajurveda, &c., purchased through Messrs. Williams and Norgate, £50 12 6, 506 4 0	—		
Do. do. Advertising Bibliotheca Indica, £0 18 0, 9 0 0	—		
Do. do. freight and packing charges, £11 15 2, 117 9 6	—		
Do. do. proportional freight on a draft of £150 0 0, 34 18	—	667 10 6	
	—	851 0 0	45 13 9
LUTCHMEE SUNDRA RAMANAH.			
Received on deposit, ...	... 39 8 0	—	39 8 0
P. SWAMINATHA AGOE.			
Received on deposit, ...	... 14 0 0		
Ditto on account of Bibliotheca Indice, ...	... 3 8 0		
	—	17 8 0	
Carried over, Rs. 14,271 4 0			

No. 2.

Oriental Fund for 1868.

DISBURSEMENTS.

1868. 1867.

ORIENTAL PUBLICATIONS.

Paid Commission on the Sale of Books, ...	Rs. 292 0 3	
Freight, ...	218 5 6	
Packing Charges, ...	44 1 0	
Purchase of Postage Stamps, ...	61 15 0	
Ditto of White Yajurveda, &c., ...	506 4 0	
Advertising Charges, ...	9 0 0	
Proportional exchange on a draft £150	31 13 6	
Purchase of Stationery, ...	9 11 0	
Petty Charges, ...	3 9 6	
	1,179 11 9	671 2 3

VESTED FUND.

Paid Commission to the Bank of Bengal for drawing Interest on the Government Securities, ...	0 13 10	
Ditto Commission and Brokerage on Sale of the Government Security, ...	13 2 0	
Ditto a receipt Stamp, ...	0 1 0	
	14 0 10	1 1 8

CUSTODY OF ORIENTAL WORKS.

Paid Salary of the Librarian, ...	360 0 0	
Establishment, ...	654 0 0	
Book-binding, ...	197 0 0	
Fee paid to the Bank of Bengal for Stamping Cheques, ...	3 2 0	
Purchase of Stationery, ...	48 14 6	
Ditto of blank Books, ...	14 8 0	
Printing charges, ...	69 6 0	
Books cleaning, ...	47 7 0	
Purchase of two Book Cases and 1 Table, ...	66 1 6	
Subscription to the Satya Brata Samasramy, ...	16 0 0	
Petty charges, ...	41 10 0	
	1,518 5 0	983 5 5

LIBRARY.

Purchase of MSS. Books, &c., ...	551 10 0	
Train hire for ditto, ...	4 6 3	
Postage for ditto, ...	4 8 0	
Binding Sanskrit MSS. purchased from Benares, ...	42 14 9	
	603 7 0	136 12 0

COPYING MSS.

Copying charges, ...	37 3 0	
	37 3 0	33 12 0

Carried over, Rs. 3,352 11 7

	RECEIPTS.	1868.	1867.
	Brought over, Rs. 14,271	4 0	
DAMODARA JETTA.			
Received by Sale of White Yajurveda,	48 0 0		
Ditto on account of Bibliotheca Indica,	240 0 0	288 0 0	511 0 0
PUNDITA RADHA KISSEN.			
Received on deposit,	0 8 0	0 8 0	
K. ROGHUNATHA Row.			
Received on account of Bibliotheca			
Indica, ...	87 12 6		
Refund of Freight,	2 14 0	90 10 6	49 8 0
BABU KARTIC CHANDRA CHOWDURY.			
Received on deposit,	0 10 0	0 10 0	
A. NARAINI Row.			
Refund of Postage,	0 14 0	0 14 0	25 7 0
BABU KEDARNATH BANERJEE.			
Received on account of Bibliotheca			
Indica, ...	93 8 0	93 8 0	
BABU BROJO BHUSUN DOSS.			
Received on account of Bibliotheca			
Indica, ...	20 0 0	20 0 0	50 0 0
DOWHILRAM DOOLIE CHAND & Co.			
Received on deposit,	5 0 6	5 0 6	
V. B SOOBIAH.			
Received on account of Bibliotheca			
Indica, ...	10 0 0	10 0 0	1 9 6
SADA SUKH LALA.			
Received on deposit,	42 8 0	42 8 0	
REV. K. M. BANERJEE.			
Received on account of Bibliotheca			
Indica, ...	13 6 0	13 6 0	
THE HON'BLE D. F. MCLEOD.			
Received on deposit,	0 7 0	0 7 0	
J. YAVIER, Esq.			
Received on deposit,	1 8 0		
Ditto on account of Bibliotheca			
Indica, ...	59 4 0	60 12 0	
PUNDITA DAMODARA BALLABH.			
Received on account of Bibliotheca			
Indica, ...	2 4 0	2 4 0	4 16 0
	Carried over, Rs. 14,899	13 10	

DISBURSEMENTS. 1868. 1867.

Brought over, Ra. 3,352 11 7

ASIATIC SOCIETY OF BENGAL.		
Paid on account of Loan, ...	12 15 2	
Ditto by transfer by Sale of the Bibliotheca Indica, through Messrs. Williams and Norgate, £27 13 8, ...	276 13 6	
Ditto in part payment of £68 15 8, for White Yajurveda,	200 0 0	
	489 12 8	165 10 11

LUTCHMEE SUNDRA RAMANAH.		
Paid Postage Stamps for sending Bibliotheca Indica,	4 15 6	
	4 15 6	

P. SWAMANATHA JYER.		
Paid Postage Stamps for sending Bibliotheca Indica,	1 13 0	
	1 13 0	

DAMODARA JETTA.		
Paid freight for sending Books, ...	17 8 6	
Ditto packing charges for ditto, ...	4 0 9	
Ditto by transfer to the Bibliotheca Indica, ...	442 8 6	
	464 1 9	329 14 9

K. ROGHUNATHA Row.		
Paid freight for sending Books, ...	2 14 0	
Ditto by transfer to the Bibliotheca Indica, ...	81 12 3	
	84 10 3	

A. NARAIN Row.		
Paid Bearing Postage on his letter, ...	0 1 0	
Ditto Postage for sending Bibliotheca Indica, ...	0 14 0	
Ditto by transfer to the Bibliotheca Indica, ...	4 11 0	
	5 10 0	20 12 0

DOWHITRAM DOOLIE CHAND & Co.		
Refunded the amount to the School Book Society, ...	5 1 6	
	5 1 6	

SADA SUKH LALA.		
Paid freight and packing charges for sending Books, ...	4 5 0	
Ditto by transfer to the Bibliotheca Indica, ...	38 3 0	
	42 8 0	

REV. K. M. BANERJEE.		
Paid by transfer to the Bibliotheca Indica, ...	13 6 0	
	13 6 0	

J. W. McCGRINBLE, Esq.		
Paid freight, &c., for sending Bibliotheca Indica, ...	2 13 0	
	2 13 0	

Carried over, Ra. 4,457 7 3

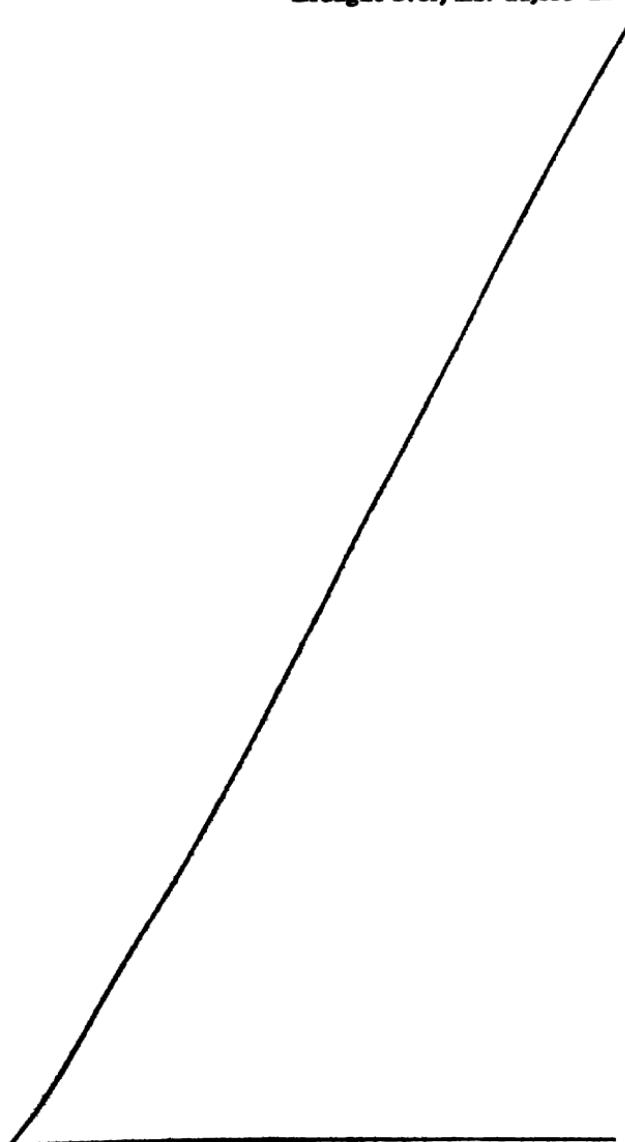
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RECEIPTS.

1868.

1867.

Brought over, Rs. 14,899 12 10



Carried over, Rs. 14,899 12 10

DISBURSEMENTS. 1866. 1867.

Brought over, Rs. 4,587 7 8

POEMS OF CHAND.		
Paid Postage Expenses on a Banghy Parcel of the MSS.,	... 13 8 0	13 8 0
PALI GRAMMAR.		
Paid Rev. F. Mason, for Editing charges,	912 0 0	
Ditto Premium for getting a draft in his favor,	10 7 0	
Ditto Printing paper for the Pali Grammar including charges for send- ing ditto,	225 15 3	
Ditto Printing &c. for 500 Copies of Covers of ditto, No. 123 and freight for ditto,	25 8 0	
Ditto Freight,	4 12 0	
Ditto Petty charges,	2 5 0	
	1,180 15 3	
AIN F AKBARI.		
Paid Salary to Moonshee, ..	360 0 0	
Ditto Printing charges, ..	1,636 12 0	
Ditto 6 Reams of 26 lbs. Printing Royal Paper, ..	78 0 0	
	2,074 12 0	426 0 0
BADSHAH NAMAH.		
Editing and Printing charges, ..	503 8 0	503 8 0
	3,796 0 0	
TARIKHI BADAONI.		
Editing and Printing charges, ..	2,113 0 0	2,113 0 0
TAITTIRIYA ARANYAKA UPANISHAD.		
Paid Freight and Banghy Expenses for sending MSS., ..	4 9 0	
Ditto Editing charges, ..	144 0 0	
Ditto Printing charges, ..	672 0 0	
	820 9 0	368 0 0
ALMAGIR NAMAH.		
Paid Editing and Printing charges, ..	200 0 0	200 0 0
	584 0 0	
SANKARA VIJAYA.		
Correcting 121 pages of ditto,	121 0 0	
Printing charges, ..	237 2 0	
	358 2 0	80 0 0
SANHITA OF THE BLACK YAJURVEDA.		
Printing charges, ..	364 14 0	364 14 0
SEAUTA SUTRA OF ASWALAYAND.		
Printing charges, ..	1,111 4 0	1,111 4 0
MIMANSA DARSHANA.		
Editing charges,	96 0 0	
Printing charges,	235 2 0	
	331 2 0	333 0 0

Carried over, Rs. 13,539 1 6

	RECEIPTS.	1868.	1867.
J. W. McCRINDLE, Esq.	Brought over, Rs. 14,899 12 10		
Received on account of Bibliotheca			
Indica,	33 5 6	33 5 6	
PALI GRAMMAR.			
Refund of the amount from the			
Rev. F. Mason for paper used by him,	126 13 10		
Ditto ditto for Pali Type, ...	54 1 6		
	180 15 4		
	15,114 1 8		
BALANCE OF 1867.			
In the Bank of Bengal,	312 15 6		
	Total, Rs. ... 15,427 1 2		

Examined, Errors and Omissions Excepted,
 Sd. PRATÁPACHUNDRA GHOSHA. Sd. BUDDINATH BYSACK,
 Asst. Secry. Cash Keeper,
Asiatic Society, Bengal. *Asiatic Society, Bengal.*

Examined and found correct,
 Sd. R. D. STEWART, } Auditors.
 " F. W. PETERSON. }

DISBURSEMENTS. 1868. 1867.

Brought over, Rs. 13,539 1 6

ASWALAYAS GRHYA SUTRA.

Printing charges, ...	672 0 0	672 0 0	100 0 0
<hr/>			
TAITTIREYA BRAHMANA.			
Printing charges, ...	224 0 0	224 0 0	368 0 0
<hr/>			
MUNTAKHAB ALLUBAR, OF KHAPEKHAN.			
Editing and Printing charges, ...	876 0 0	876 0 0	
<hr/>			
		15,311 1 6	

BALANCE.

In the Bank of Bengal, ...	115 15 8	115 15 8
<hr/>		

Total Rs. ... 15,427 1 2

Examined,
Sd. PRATAPACHUNDRA GHOSHA.
Asst. Secy.
Asiatic Society, Bengal.

Errors and Omissions Excepted,
Sd. BUDDINATH BYSACK,
Cash Keeper,
Asiatic Society, Bengal.

Examined and found correct,
Sd. R. D. STEWART,
, F. W. PETERSON, } Auditors.

STATEMENT No. 3.
Showing the Assets and Liabilities of the Asiatic Society of the Close of 1868.

STATEMENT No. 4.

Showing the Assets and Liabilities of the Oriental Publication Fund of 1868.

Examined, Sd. PRATAPACHUNDER GHOSH, Ast. Secy. Asiatic Society, Bengal.	Errors and Omissions Excepted, Sd. BUDDYNATH BYACK, Cash Keeper. Asiatic Society, Bengal.	Examined and found correct, Sd. R. D. STEWART, " F. W. PETERSON,
		} Auditors.

PROCEEDINGS
OF THE
ASIATIC SOCIETY OF BENGAL,
FOR MARCH, 1869.

The Monthly General Meeting of the Asiatic Society of Bengal was held on Wednesday the 3rd instant, at 9 o'clock P. M.

E. C. Bayley, Esq., in the chair.

The minutes of the last meeting were read and confirmed.

The following presentation was announced —

1. From the Government of India, Home Department, 24 bronze medals, executed at the Calcutta Mint.

The following gentlemen are candidates for ballot at the next meeting —

E. D. Lockwood, Esq., C. S., proposed by Lieut. R. C. Beavan, seconded by Dr. J. Anderson.

M. L. Feriar, Esq., C. S., proposed by Mr. H. Blochmann, seconded by Dr. F. Stoliczka.

Moulvie Kabeeruddeen Ahmad, proposed by Mr. H. Blochmann, seconded by Dr. F. Stoliczka.

Dr. F. Day, Madras M. S., proposed by Dr. J. Anderson, seconded by Mr. H. Blochmann.

Rev. C. Haberlin, Chota-Nagpore, proposed by Mr. H. Blochmann, seconded by Dr. F. Stoliczka.

Col. H. Hopkinson's desire to withdraw from the Society was recorded.

The President said he had much pleasure to announce that His Excellency Earl Mayo has been pleased to accept the office of Patron of the Society.

The following papers were read —

I.—*Short notes of a trip into the hills south of Sibsaugor* ; by
A. C. PEEL, Esq.—communicated through DR. J. ANDERSON,
by DR. STOLICZKA. (Abstract.)

Mr. Peel in company with Mr. Wagentreiber, Junior, accepting an invitation from the Rajah of Banparas, started on their trip on the 30th of May last year. The usual difficulties of mountain travelling were soon felt, the road passing to a great extent through jungle, generally along streams ; and the path soon became so narrow that not more than one man could pass on it at the time. The amount of waste land was also very large, scarcely 1 per cent. of the area appearing to have ever been under cultivation, though in most places the land was well situated. The rock was mostly sandstone, but many quartz pebbles were to be seen in the bed of streams.

Wild elephants appeared numerous. They are caught in traps, these being deep excavations in the ground, wider below than above, supplied at the bottom with numerous bamboo spears, and covered over with branches of trees and grass. These traps are generally constructed on narrow passages of the road. Wild pigs and various deer were observed in large numbers. Very remarkable was also the quantity of fish in all the streams, but unfortunately the Nagas sometimes use poison to catch them, and thus destroy often more than required to satisfy their wants.

The party of travellers was met by the Rajah's brother, who soon was joined by the Hoondekai and the Lowdong. The latter is the name of an official who travels in the name and the authority of the Rajah, the former designates an official who represents the Rajah at home. After a march of the first few miles the road became so difficult, that the elephants had to be sent back ; and the journey was prosecuted on foot. The village Lowghong was soon reached, and with the permission of the Khoonsai, or the head man of the village, the party visited the same. Only a very small portion of the land was under cultivation and the same ground is seldom cultivated for more than two successive years, a fresh piece of forest being generally every two years burnt down for the purpose of cultivating the *dhan*. The village was partially surrounded by a ditch, 6 feet wide by 6 feet deep, and fenced by bamboo sticks ; besides this there were watch-houses and other kind of fortifica-

tions. A custom seems to prevail here to expose the bodies of the dead on raised bamboo stands, roofed in with Jaroo palm leaves. Each village has its Jack trees (*Artocarpus integrifolius*) with which its whole history is usually connected, some of the trees appearing to be from 300 to 400 years old. From the highest point of the village a magnificent view into the surrounding hilly country could be obtained, especially in the districts occupied by the Hooroo Mootoons and the Bor Mootoons; those of the Neyowloong Nagas were also distinctly discernible.

From Lowghong the party returned to the place where they left the Khoonsai of the village, and proceeded westward, until they reached the river Sisa, where they camped for the night. Next morning the 31st May, the journey was continued, first in a westerly and afterwards in an almost due northerly direction towards Banpara. The path was at first very steep and up a ferny cleft; it, however, soon became more level, passing round the shoulders and along the ridges of a series of small hills, tolerably level in the main and at sufficient height to give a good view. At about half way to Banpara the party came to a place that could be easily defended; it lies on a narrow ridge with a precipice on each side and not more than four or five yards across. The obstruction was commanded by a rise in the ground beyond it, though it could not be seen from any distance. Further on the road was for a short distance cut on the face of a precipice, being only a few inches wide.

Soon after the party came to the village Banpara. It was a similarly built place as Lowghong, being extremely irregular and broken up, the houses all thatched with Jaroo leaves; the jack trees were also large and numerous. The party was conducted to the Rajah's house which was by far the largest in the Chang, and had to be climbed up on a notched tree-stem. The Rajah, a man of about 40 or 45, was seated on a sort of huge stool, about 8 feet high by 5 feet broad, and a similar bench was prepared opposite for the party. Many officials of the Rajah and other visitors of course assembled to witness the ceremony of presentation. The Rajah spoke at first a few words regarding the country and his people, but the confusion, characterised by every one wishing to have a voice in the assembly, soon became general. The party was then requested to perform some miracles,

which were supplied by firing off revolvers, striking matches, &c. A magnet also seemed to yield a great deal of amusement.

The house of the Rajah was then inspected, it was estimated to be about 200 feet long by 50 feet broad, and about 50 feet high. Like most of the other houses it was built two-thirds on a rock, and about one-third continued out level by a platform, supported on posts ; this part was the audience end. Inside it was divided by three longitudinal rows of jack-tree posts, one down the centre, and one on each side. After the greater number of the Khoonsais and Hoondekais had left, the Rajah was prepared to receive his presents, though he appeared to have been rather dissatisfied at not getting one of the guns, or revolvers. A few of the houses in the village were afterwards also visited, but they all resembled that of the Rajah, built only on a much smaller scale.

The Moorroong, or skull house, was next inspected. There were about 350 skulls there, half of them being hung up by a string and the other half lying in a heap on the ground. No lower jaws were to be seen, nor any other parts of the skeletons. The hands and feet are always cut off with the head, when a man is killed, each conferring a different kind of *Ak*, or decoration. It was curious, says Mr. Peel, to be face to face with the great cause of the isolation of the tribes and the constant warfare. It is, namely, a custom of great antiquity, that, all social position depends on *tattooing*, and this decoration can only be obtained by bringing in the head of an enemy. Unless a man can succeed in doing this, he cannot take part in counsels of state, &c. One who gets the head of an enemy secures for himself the *Ak* on the face. Another who gets the hands and feet, when a man of the same party gets different marks accordingly, either on the hands, or on the legs. The worst of this kind of warfare is, that women and children are as often killed as men, and without any compunction. Besides the skulls, the Moorroong also contains the big drum which is cut out from a tree stem. It is beaten by short heavy sticks and can be heard at a distance of from six to seven miles. Slavery seems to be a common custom among these people, the captives of enemies being generally retained as slaves.

The return journey was performed along the same road, and it did not occupy more than ten hours, the whole distance being about 24

Mr. Peel suggests that potatoes and other vegetables could be introduced into those hills with great success.

The Banpara tribe consists of four villages, and the mean of several Assamese and Naga estimates of the number of houses given, is as follows—

Banpara,	300 houses.
Lowghong,	200 ,,
Oonoo,	350 ,,
Nokorong,	50 ,,
Total, ... 900	

Mr. Peel is, however, inclined to think that 600 houses will be nearer the mark, and that there are about 1200 able-bodied men. The Joboka-Nagas have 5 villages with about 1200 houses and about 2000 able-bodied men; the Mootoongs occupy 4 villages. Mr. Peel further notices the various weapons used by the Banparas; the spears, axes and bows are of the usual form used by the Naga inhabitants of these hills. No trade seems to exist between these hill tribes and the inhabitants of the plains. With the exception of a very small quantity of sat, and a few other things exchanged for rice, almost nothing is brought down.

In conclusion Mr. Peel gives a short account of the occurrence of several seams of coal in the lower hills south of Sibsauger. Some of the coal appears to be of very good quality, judging from the conchoidal and glittering fracture of the samples obtained. A short vocabulary of the Naga language is also added.

The paper is accompanied by a series of beautiful coloured sketches, illustrative of the character, habits and customs of the people, and of the general character of the country.

II.—*Further notes on Chand's poems* ; by F. S. GROWSE, M. A., C. S.

The President read the greater part of this paper, which will be shortly published in the first number of the Philological Part of the Journal.

Mr. Blochmann said that the paper just now read by the President was the second paper on Chand, with which Mr. Growse had favoured the Society. Mr. Growse conferred a benefit on Oriental scholars by

giving translations of extracts, as Hindi poetry was extremely difficult. He had lately had a letter on this subject from Professor Bröckhaus of Leipzig, who expressed the same wish as Professor Garcin de Tassy had done in his last 'Discourse,' that the Society should print translations from Hindi, because very few scholars in Europe were able to understand Hindi poetry, though there might be many who spoke Hindustani with fluency.

He therefore hoped Mr. Growse would continue his contributions.

III.—Notes on the Arabic and Persian Editions of the Bibliotheca Indica, by MR. H. BLOCHMANN.—No. I. Badaoni and the Religious Views of Emperor Akbar. (Abstract).

Mr. Blochmann said :—

This paper is the first of a series of Essays on the works printed by the Society in its Bibliotheca Indica. The essays are intended to collect all the information which we possess regarding the authors of our editions, their writings, style, &c., and to give translations of interesting extracts, accompanied by philological notes.

The work which I have reviewed in this paper, is the most remarkable history of Akbar's reign, by Mullá 'Abdulqádir ibn i Múluk Sháh of Badaón. This history is written in a spirit hostile to Akbar and his ministers, and was therefore concealed by the author and his children during Akbar's lifetime. This book was, however, discovered towards the end of Jahángir's reign. It is valuable for the biographical notices of learned men and poets of Akbar's age, as also for the detailed information which it gives on Akbar's religion.

I shall now read an abstract containing a few summary remarks on *Akbar's Religion*.

The religious opinions held by men of historical importance, present many interesting features. They concern the inner life of the hero, and disclose the motives of his deeds. Hence biographers find it a profitable task to dwell on this subject, especially when it is possible to trace the circumstances which led their hero to modify or reject the religious views in which he had grown up.

That the greatest Muhammadan emperor, which India has produced, should have openly abjured the Islám, and established a new church, is a remarkable fact, and would scarcely be credited, if we had not

the testimony of three historical works, whose authors widely differ in character and opinions.

These three works are the *Akkarnámah* by Abulfazl, Akbar's Prime Minister, and especially its last volume, which is best known under the name of *Aín i Akbari*; secondly, the *Muntakhab al-Tuwárikh*, by Abdul Qádir of Baulón, who held an office at Akbar's court; and thirdly, the *Dabistán ul Mazáhib*, a work written about sixty years after Akbar's death by an unknown Muhammadan writer of strong Pársi tendencies.

We may also add the valuable testimony of Portuguese Missionaries whom Akbar called from Goa, as Rodolpho Aquaviva, Antonio de Monserrato, and Francisco Enriques, &c., of whom the first is also mentioned by Abulfazl under the name of *Pálri Radalf*—not *Radif*, as bad MSS. spell his name.

From the abovementioned three works, we gather the following leading facts regarding the *Divine Faith*, which name Akbar gave his new religion.

Akbar's secular and religious education had been entirely neglected, owing to political circumstances. Being surrounded by Hindu servants, when young, and married to Hindu princesses, when scarcely of age, he came into close contact with Hindu forms of worship, which were openly practised in the harem of his father and in his own. Thus a strong attachment to Hinduism grew up in Akbar's heart. To judge from Badaoni's remarks, the influence of the Hindu portion of Akbar's harem, which contained above 5000 women, was very great, and was no doubt the principal reason for Akbar's apostacy from the Islám.

Akbar's early wars, from 1556, when he was in his fourteenth year, to 1574, did not allow him sufficient leisure to take up religious questions, or to supply the deficiencies of his secular education. But Akbar felt the want. A change, however, took place towards the end of 1574, or 982 A. H., the eighteenth year of his reign, and the thirty-first of his life. "No political opponent was left on the field," and the years from 1574 to 1581, which Akbar spent at Fath-púr Sikri, were comparatively peaceful. Immediately before 1575, Akbar entertained, and openly expressed, doubts regarding the correctness of several points of the Muhammadan religion. He also

shewed a slight dislike to the 'Ulamás and the Mullás, the learned and the lawyers, whom he thought somewhat conceited, whilst he manifested a sincere regard for really pious men and Qúfis, especially for such as lived in voluntary poverty. Of the tenets of Hinduism, he was particularly attached to the doctrine of the transmigration of the soul. According to the testimony of his enemies, he then possessed a sincere heart, and was anxious to discuss certain tenets of the Islám. For this reason he invited the learned and the lawyers of various sects to meet him every Thursday* evening. These meetings however, produced the very opposite of what Akbar wished. The 'Ulamás, in the very beginning, quarrelled about precedence and rank; the discussions were carried on in a bitter spirit, and even in violation of all rules of *decorum*. As both Shi'ahs and Sunnis were present, every question was made a party cry, and the difference of their opinions regarding some Islamitic laws was most remarkable. Akbar, instead of profiting from the 'Ulamás, learned daily more to despise them; and judging the Islám by his conception of the character of the 'Ulamás, he ceased to look upon the religion of the prophet as the only true religion, and, shortly after, assigned to it a very inferior rank among the religions of the world.

Another proof of the emperor's sincerity is the zeal which he shewed in collecting information regarding other religious systems. He spent whole nights in conversation with free-thinking Qúfis; he called Pársi priests from Gujrát, and Roman Catholic Missionaries from Goa, whilst acute Brahmins led him into the mysteries of Hindu philosophy. After making himself acquainted with the tenets of these religious systems, Akbar came to the conclusion that there were in every sect sensible men, and that it was, therefore, improbable that truth should be confined to one single religion, especially to a religion like the Islám, which had not existed a thousand years.

This conclusion led to two important results:—*first*, it convinced Akbar of the necessity of perfect religious toleration; and *secondly*, it induced him to think that truth might be found by selecting, from among the tenets of all religions, those doctrines which recommended themselves to his calm understanding.

* Not Friday evenings, as given in Elphinstone's History. *Sháh-i jum'ah*, in Hind. *jum'ah ki rát*, is Thursday evening.

In his opinion of the Islám, Akbar was also influenced by several of his courtiers, as Hakím Abulfath of Gilán, who came to Fathpúr Síkri in 1575, Mulla Muhammad of Yazd, and Mir Sharíf of Amul, who arrived in 1576. They were Persian Shi'ahs, the two former very bigoted, the third a man of no principles. Of Brahmins, three are generally mentioned—Purukhotam, Débí, and Bir Bar. Among the Qúfís, Akbar esteemed most Shaikh Tájuddín of Dihlí, upon whom people looked as the greatest Qúfí then living, though his speculations often wandered from the path of religion. Of Hindustání Sunnis, the most important were Shaikh Mubárik of Nágor, and his sons Faizí, the second greatest poet of Hindustán, and Abulfazl, Akbar's famous minister. They were waiting to see to what religion Akbar would turn; and in the meantime successfully tried everything in their power to increase Akbar's dislike to the 'Ulamás and the Islám in general. Abulfazl, who had been introduced at Court in the beginning of 1574, owed his success to his argumentative skill, and was immediately fixed upon by Akbar as the man who could teach the proud Mullás a lesson of humility.

Akbar's dislike of the learned and the lawyers, and their constant defeats at the Thursday meetings, lessened considerably the authority of the Chief Justices of the Empire, and might have produced serious difficulties, had not Shaikh Mubárik, by a clever stroke, transferred the interpretation of the law from the judges to the emperor himself. The Shaikh prepared a legal document, for which he got the signatures of Shaikh Ab-lunnabí, qadr of the realm, of Qázi Jalál-uddín, the Qázi-lquzát of the empire, of Çadr Jahán, Akbar's crown-lawyer, and of Makhdúmulmulk and Gházi Khán, the leaders of the 'Ulamás. In this document they declared that, in consequence of the serious differences between the several expounders of Muhammadan law, after due deliberation, they had found it necessary, to ask the emperor to assume the office of *Mujtahid*, or infallible authority of the age, and they had agreed among themselves to refer to him all differences in interpretation, and would hold themselves bound by his decisions for ever.

It is impossible to say whether this curious document was of any practical importance. Akbar publicly assumed the office, and very soon after considered himself the spiritual king of the nation. If it

was Shaikh Mubárik, who had first put the idea of *Mujtahidship* into Akbar's heart, it was his son, Abulfazi, who convinced the emperor of the divine right of kings of ruling as God's representatives on earth, and of being the leaders of the nation in political and spiritual matters. 'Royalty,' says Abulfazi, 'is a light emanating from God, and communicated by God to kings independent of other men. This light teaches kings to understand the spirit of the age, and to regard the performance of their duty as an act of divine worship. Men will find peace in the love of the king, and all sectarian differences will vanish. Let the nation rally round Akbar, and they shall escape the perplexities of this life by worshipping God in obeying the king.'

Several circumstances confirmed Akbar in his plan of guiding the people in spiritual matters. The Islám approached the Millenium, and all looked with anxiety to the year 1000 of the Hijrah, or A. D. 1590-91. Rumours were widely spread of the appearance of *Imám Mahdi*, who, according to the belief, was to appear in the latter days, when the faithful were few on earth. His appearance is immediately to be followed by the advent of Christ, who is to re-establish the Islám on a firm basis. The news of the discovery of the New World, or the *jahán-i-nau*, had spread from Goa and the Portuguese Settlements over India and Persia, and stirred up the old fashioned notions of men of science. A great comet which was visible in India and Persia during 1577, filled the minds of all with great fear. All agreed that the Islam had lost its lustre; everywhere heretical notions spread, chiefly through Persian adventurers, whom the conquest by the Turks of the north of Persia had driven to the Shi'itic kings of the Dak'hin, or the Sunnis of Bukhárá, and at last to the Hinduizing court at Fathpúr Sikrí; and the decrease of faith on earth made people the more inclined to expect a great religious change.

Akbar's courtiers eagerly seized the opportunity, and pointed to the emperor as the restorer of all things.

One of the first consequences of the above-mentioned document was, that Akbar denied the doctrine of inspiration, the miracles of the prophet, and a future life in as far as it differed from transmigration. The formula, 'There is no God, but God, and Muhammed is his prophet', was, in 1579, openly changed to 'There is no God but God, and Akbar is God's representative on earth.' But as this

formula of the new creed gave much offence, it was at first restricted to the palace. In the same year, the *jazyah*, or tax which Muhammadan kings are enjoined by the Qurán to levy on all infidels, was abolished, after it had been temporarily revived in 1575. A large number also of 'Ulamás were exiled, or deprived of their *jágirs* (*Siyur-gháls*), or sold as slaves, or, according to Badaóní, exchanged for Qandahár horses.

In 1580, Akbar appears more distinctly as the head of a new creed. The first order which he issued, defined the limits of obedience of his disciples. They were required to be ready to sacrifice on his account four things, *viz.*, their property, their life, their personal honour, their old belief.

In 1582, the era of the Hijrah was discontinued. Akbar likewise enforced the *sijdah*, or prostration, which the Muhammadan law looks upon as belonging to God, and not to man; and though this order also gave at first much offence, the courtiers got gradually accustomed to it, especially when the offensive word *sijdah* was changed to *zamínbos*, or kissing the ground. Even Badaóní performed it. The sale of wine was allowed, and a moderate drinking of wine was approved of. Playing at dice also was allowed. The use of beef was forbidden at court. The courtiers were ordered to shave off their beards. Written formulæ of confession came into use, which intending members handed over Abul'azl, who now was the *Mujtahid* of the Divine Faith, as Akbar was God's representative on earth. The confession papers read as follows: 'I, such a one, the son of such a one, declare that I have freely and cheerfully renounced the Islám, in all its phases, whether broad or high, which I have witnessed in my parents, and I hereby join the religion of Sháh Akbar, to whom I am willing to sacrifice property and life, honor and belief.'

Several ablutions commanded by the Muhammadan law were abolished. Pigs and dogs were declared ceremonially pure. Disciples were forbidden to make feasts in honor of a dead person; they were enjoined to prepare a great dinner for the poor during their lifetime. The flesh of the tiger and the wild boar was declared lawful. Marriage with first cousins or still nearer relations was interdicted, because the offspring of such marriages was, as a rule, weakly. No young man was to marry before the age of sixteen, and no girl before fourteen. The

wearing of silk apparel at the time of prayer was permitted. The prayers of the Islám, the fast of the Rámazán, and the pilgrimage to Makka were interdicted. A new era, called the Divine Era, was established, which commenced from Akbar's accession. The months of the year were made Solar, and the old Pársi names of the months were revived. All feasts of the Pársi calendar were introduced. The study of Arabic was ordered to be discontinued, and the reading of the Qorán and Muhammadan law was prohibited. Philosophy, History, Arithmetic and Geometry, Literature and Astronomy were to form the subjects of education. The life of the prophet was openly criticized, and the courtiers vied with each other in relating damaging stories about him, which Akbar received as so many presents made to him. Thus they said, the prophet had openly lived as a highway robber, and plundered the caravans of the tribe of Quraish, to which he belonged; he had married fourteen wives, mostly widows, and allowed the faithful only four; he had claimed the right of possessing any married woman, whom he liked. The Shi'ahs at the same time reviled the first three caliphs, which they look upon as meritorious.

The frequent repetition of the formula, 'Allahu Akbar' was introduced as a religious exercise. This formula had been used as far back as 1575, on coins, in the commencement of grants, farmáns, and as a heading in books, letters, &c. It recommended itself to Akbar for its ambiguity; for it may mean, 'God is great,' or 'Akbar is God.' Faízi, the court poet, openly acknowledged Akbar to be God. Some of his poems are very clear on this point. Thus he says in a rubái:—

"If you wish to know the right path, as I now know it,
Remember that, without the Sháh, you cannot know it.
Mere prostration is of little use,
Know Akbar, and you will know God."

Mullá Sheri also, whose poems contain satirical remarks on the New Creed, alludes to a possible apotheosis. He says in a qasídah:—

"This year the Sháh has been raised to the dignity of a prophet,
Next year, if God's will be done, he will be made a god."

In the same year the courtiers urged Akbar to use the sword, in order to propagate his new faith, and referred to the success of the ~~Qáshí~~ kings of Persia, who had firmly established the Shi'ite form of

the Islám by means of the sword. But Akbar was too wise to attempt this mode of conversion, though he reduced many an old Súnni family to distress by plundering their mosques, or withdrawing their grants, or exiling them.

The *Azín*, or call to prayer, was discontinued at court, and the word *Muhammad* was forbidden to be used in names. Many courtiers changed their names. Translations from Sanscrit, which had first been commenced in 1573, were eagerly pushed on. The *At'harban*, *Ramáyan*, *Mahábhárat*, *Lilawatí*, and the History of *Kashmir*, were translated into Persian.

In 1583, the killing of animals on Sundays was interdicted, this day being sacred to the Sun, as also during the first eighteen days of the month of *Farwardín* (February—March), the first month of Akbar's year, the whole month of *Abán* (October), in which Akbar was born, and several other days, in order to please the Hindus. This order, according to *Abulfazl* and *Budáoni*, was extended over the whole empire. Akbar himself abstained from meat for more than half the number of days in the year, and increased the fast days (*qúfiyánah*) from year to year, with the view of gradually giving up meat altogether. Rules of worship for the Divine Faith were issued. Prayers were to be addressed to the Sun in the morning, at noon, at sunset, and at midnight. Sun-worship had been openly practised at court since 1579, whilst Akbar, from his early youth, had taken part in the *hom*, a kind of fire-worship practised by the Hindu women of the harem. During 1579, some Pársis had come from Nausári in Gujrát, and a fire temple had been built in Fathpúr Sikrí, which was placed under the care of *Abulfazl*. A Pársi priest of the name of *Ardsher*, whom Akbar at great expense had brought from Persia, instructed the emperor in the old rites of the Pársis. To this Pársi we also owe the preservation of many Zand words in the greatest Persian Dictionary of India. In 1580, the order had been given that all courtiers should rise, when the candles were brought into the halls of the Palace. In 1583, one thousand and one Sanscrit names of the sun were collected and the reading of these names was ordered as a means of spiritual blessings. Akbar said them every morning after sunrise, assisted by a Brahmin, and then shewed himself to the multitudes that daily crowded round the palace

and prostrated themselves on his appearance. The time of the four prayers was announced by bells and gongs, and the imperial band played hymns, a large number of which Akbar had himself composed. The emperor also appeared in public with the mark which Hindus put on the forehead.

The mosques being now useless, were changed into store-rooms, and into houses for Hindu chaukidárs. The cemeteries within the towns were sequestered, as tending to give offence to the Hindus. Several eating-houses were erected for poor Hindus and Muhammadans, and another for Jogis, who promised Akbar that he should live three or four times as long as ordinary men. The Brahmins persuaded the emperor, that he was an incarnated deity, and said that he only played with the people of the world by delaying to assume his real form. They brought at the same time proofs from antique looking manuscripts, containing prophecies regarding a great king who would honour cows and Brahmins, and the courtiers brought predictions of the man of the Millenium, which they said they had found among the poems of Nácir-i-Khusrau, a free-thinking Persian poet of the sixth century.

In 1585, the conversions to the Divine Faith were numerous. In 1587, Akbar ordered, that his disciples should only marry one wife, except in cases of barrenness. Widows were allowed to marry again. Disciples, on meeting each other, should not use old salutations as *salám, taslím, bandagi*, &c., but one should say, 'Alláhu Akbar,' and the other reply, 'Jalla Jaláluhu' (great is his glory). This was to remind people of God and of Akbar, whose full name was Jaláluddín Akbar. Hindu judges were also appointed to hear all cases between Hindus. People should be buried with their feet placed towards the west, and the courtiers commenced even to sleep with their feet towards the west, a position which every Muhammadan in India considers highly improper, as Makkah lies west of India. In the same year the study of Arabic was prohibited throughout the empire. In 1590, the meat of buffaloes, sheep, horses and camels was forbidden. Hindu women should not be burnt together with their dead husbands, except they did so freely; but soon after Suttee was again permitted without restriction. Circumcision was forbidden before the age of twelve, and boys were then to decide for themselves. No member of the

Divine Faith was to eat or drink with butchers, fishermen, and bird-catchers, on pain of having his hand cut off.

In 1598, Akbar proclaimed perfect toleration, and advised all those to return to their old religion who, from pressure, had embraced Islám.

Abulfazl, in the *Aín*, gives an account of the ceremony of initiation of new members. The initiation took place on Sundays, at noon. The candidate approached the emperor with his turban in his hand. He then put his head on the feet of the emperor. After this, Akbar lifted him up, replaced the turban on his head, and gave him his likeness, round which the following words were written :—

The pure aim and the pure sight never err.

The emperor's likeness, which was called *shaqt*, or *aim*, was worn by members on their turbans.

As Akbar ultimately believed that he was god, his courtiers were quick enough in supplying the miracles. Abulfazl had the intention of writing a book on Akbar's miracles. Akbar is said to have spoken when he was young, as Christ did, according to the *Qorán* and the spurious gospel of Christ's Childhood. On one occasion, a wild leopard had fallen into a pit; Akbar took out the animal himself, when it suddenly became as tame as a dog and followed him. On another occasion, a faqír had cut off a piece of his tongue, and after throwing it at the threshold of the palace, sat down on the road, convinced that Akbar would be informed by God of his condition, and heal his tongue. Before it was evening, his tongue was healed. "On such occasions," says Abulfazl, "the eyes of many were opened." But in another passage of the *Aín*, Abulfazl says very clearly that Akbar was obliged to pretend to possess miraculous powers, because the vulgar would have them, but that both Akbar and he himself secretly smiled at the simplicity of the people. It is certain that sick people continually brought cups of water to the emperor, requesting him to breathe upon the water. Such water healed all diseases.

From the Roman Catholic Missionaries, Akbar accepted crucifixes and Madonnas; but they confess that their preaching made no impression on Akbar, who would not allow any one to interfere with his prayers to the sun and the fire. They looked upon him as an idolater. To please them, Akbar in 1579 allowed his second son Murád to take

a few lessons in Christianity, 'by way of auspiciousness,' and the young prince, instead of saying in the commencement of his lesson the Muhammadan formula, 'In the name of God the Clement and Merciful,' was taught to say—

Ai nám tu Jesus o Kiristo,

(O thou whose names are Jesus and Christ !)

Akbar's disciples were chiefly Muhammadans. With the exception of Bîr Bâr, who was a man of profligate habits, the name of no Hindu member is mentioned, either by Abulfazl or Badâoni. There may have been a few Hindus, because Badâoni mentions that Akbar promoted Hindus on becoming members of the Divine Faith, though he did so rarely in the case of Muhammadans. The old Râjah Bhagawân Dás, Râjah Todar Mall, and Râjah Mân Singh remained staunch, though Akbar tried hard to convert them. Of the Muhammadan members of the Divine Faith, Badâoni says: "They behaved like Hindus converted to the Islám." The following were members:—

1. Abulfazl. *
2. Faizi, his brother, Akbar's court-poet.
3. Shaikh Mubârik, of Nâgor, their father.
4. Ja'far Beg Aqâf Khân, of Qazwîn, a historian and poet.
5. Qâsim i Kâhî, a poet.
6. Abdusyamad, Akbar's court-painter; also a poet.
7. A'zam Khân Kokah, Akbar's foster brother, after his return from Makkah.
8. Mullâ Shâhî Muhammad of Shâhâbâd, a historian.
9. Çâfi Ahmad.
- 10 to 12. Çadr Jahân, the crown-lawyer, and his two sons.
13. Mîr Shirîl of Amul, Akbar's apostle for Bengal.
14. Sultân Khwâjah, a çadr.
15. Mîrzâ Jâni, chief of T'hat'hah.
16. Taqî of Shustar, a poet and commander of two hundred.
17. Shaikhzâdah Gossâlah of Banâras.
18. Bîr Bâr.

From the year 1593, when the law of perfect toleration was promulgated, our information regarding the Divine Faith gradually ceases. Badâoni's History ends with 1595, and in the next year the greater part of Abulfazl's Aín was completed.

With the death of the emperor in 1605, the Divine Faith died out. Akbar, relying solely on his influence and example, had established no priesthood, and appointed no proper person for propagating his faith. If we except the influence which his spirit of toleration exerted, the masses remained passive. Zealous members, as Mīr Sharif of Amul, took again to sophistry, as Jahāngīr did not trouble himself about any religion. The new Emperor retained Akbar's Solar Era, and shews in the phraseology of his memoirs much reverence to solar worship. But during his reign, the spirit of toleration soon changed to indifference, and gradually died out, when a reaction in favour of bigotry and persecution set in under Aurangzeb. But people still talked of the Divine Faith in 1643, when the author of the *Dabistān* collected his notes on Akbar's religion.

IV.—Notes from Assaloo, North Cachar, on the Great Earthquake of January 10th, 1869; by Captain GODWIN-AUSTEN, F. R. G. S., Surveyor, Topographical Survey of India,—communicated by Dr. STOLICZKA.

[Received 25th February, 1869—Read 3rd March, 1869.]

I have been led to put together these few notes, taken here during the late period of seismic disturbance (still in action), owing to the great interest taken in such phenomena by every one, and more especially by those with any taste or knowledge of geology, and consequent acquaintance with those terrible convulsions, which in past epochs laid waste and altered the whole face of this globe, and left it in its present form to us. At no time are such past changes brought more vividly to the mind of man, than when viewing the passage of such mighty earth-waves, as have lately flowed under our feet, giving to the crust of solid strata an ominous plasticity. To watch the progress of such mighty efforts for 60 seconds only! terrible is the scene, and thankful may we be, in these days, that they seldom in their full force last longer, or perhaps to put it in other words, that the intervals of time between great convulsions are so enormous. The imagination palls before a serious disturbance of say only a quarter of an hour's continuance.

The earthquake here, though so violent, burst upon us without the slightest warning, a very unusual occurrence, as a rumbling more

or less loud is generally heard a few seconds before. In nearly all earthquakes, I have myself felt, such has been the case, and nowhere are such sounds heard with greater distinctness, than when on the summit of a high peak in the midst of a mountainous country, where all the world is in perfect quiet around. The low rumble is then heard for a considerable time before the earth below receives the shock. As many persons believe, and are of opinion that seismic disturbance is connected with atmospheric phenomena, noticeable long before the former force is exerted, I shall in this paper be particular,—though it may appear to some, adding unnecessarily to its length—and allude to the afternoon of the day in question, the 10th January, 1869.

The day, like 3 or 4 previous ones, had been rather hazy, not at all unusual in these hills at this time of year. The wind about 3 p. m. rose gradually up to about 4-30, blew gustily and cold. It must be remembered by those unacquainted with this locality, that the height is 3,000 feet above sea level, and near the base of a range with peaks rising up to 6,000. There was certainly nothing unusual or peculiar about the appearance of either the sky or the weather, these can have but little connection with forces acting so far below the earth's surface. That the action of an earthquake affects the atmosphere and temperature is almost certain, and I can imagine, that electrical and magnetic forces would be greatly agitated, after it has taken place, or rather during its continuance. There was one thing I did notice, and it is remarkable: a few seconds before the earthquake took place, wanting to make out a Trigonometrical mark on a hill-range some 20 miles distant, I had got out my telescope for the purpose, but it was so hazy that I gave up the hope of seeing even the outline of the ridge. Immediately after the earthquake, on looking in the same direction again, I was surprised at the sudden clearness that had taken place in the air, the ridge I had been endeavouring to scan, was sharply defined against the sky, and the whole of the western horizon was shewing clear.

The earthquake was ushered in by one or two long waves of motion, these I estimate from the time noted by the chronometer before the shock was quite over; in about 20 seconds they were succeeded by others much higher and following in rapid succession, and this was the time of greatest agitation of the surface, followed by great quiet rolling.

or heaving, without any jarring motion ; it was, however, impossible to tell without the aid of an instrument when the motion ceased, but all, save tremor, had disappeared in about $2\frac{1}{2}$ minutes. Yet there was certainly instability in the ground nearly the whole of the interval, 10 minutes, between this and the second well-defined shock. The horizontal undulating motion, was decidedly combined with another force, a kind of jerking from side to side ; the surface not only rose and fell, but its parts seemed to shift about each in segments. The position of our camp here is on the principal northern spur thrown off by the well known and conspicuous peak of Mahadeo, 5,751 feet ; this is on the line of the North Cachar Hills as well as on the principal line of elevation ; the whole mass being here tilted up and dipping over southward some 40° — 50° . In fact Assaloo lies on the northern flexure of the great unicinal that runs thence towards the west, marked conspicuously by the Jatinga and Kayeng valleys, and ultimately with the same great feature at the base of the Cherra Poonjee Hills and into the Garo Hills. It marks the great bend and break in the stratified rocks, when this mountain system was first upheaved. The North face of Mahadeo peak, clothed with magnificent forest growth, presented during the earthquake a strange wild sight, it appeared as if swept by a mighty wind, and the large trees in the foreground were seen swaying with the passing waves, from side to side, with great violence ; one large one came down with a crash, and another the roots of which had been much loosened fell the next day. There was a confused din from the ground below, mingled with the noise caused by the surging of the trees, this last sound I heard above that in the camp. Most individuals sat down, and it was with the greatest difficulty, that I and one or two others, who remained standing, could keep on our legs. The scene was most awe-inspiring, and the feeling instilled "what may happen next ?"

As might be expected, very great difference of opinion existed among persons in camp as to the direction whence the shock came and proceeded, some even stating the very reverse of the true direction. There is very little doubt that the direction was from west to east, the noise and motion in the trees certainly subsided and passed off to the east. A helitroper with 2 men, on the top of

Mahadeo, whence the view is most commanding over the sea of hills in Munipur, tells me that he could see the Mountain Peaks nearer at hand and on the East heaving about, and that the noise of falling rock was very loud, and continued long after the earth had quieted down with him. The effects upon these hills are very great; ravines choked with rock and debris; and one party of my men out-poling, found the body of a fine stag, that had been killed by the falling rocks when standing by the water-course.

On the Diyung, its effect seems to have been very severe; the high steep banks of recent clays and sand gave way in many places, falling into the river, the ground along the valley was much bent and the houses, structures of poles and matting were in many instances thrown over.

On the peak of Sherfaisip (a trigonometrical station) 26½ miles almost due west of this place another helitroper of this survey was stationed on the 10th; this peak is also like Mahadeo, situated on the North Cachar range, and is one of its culminating points, 5,612 feet. This man's account, is most interesting. He was on the peak by himself, sitting at the station mark with his heliotrope, facing east ready in case he was required to shew to Mahadeo; all was still, and he was likely to hear and notice any peculiar sound. He says that about 15 or 20 minutes before the shock, he heard the sound of a distant cannon (*lope* was the word used), as if fired some 30 or 40 miles distant. Before the shock came on, he heard the rambling coming from the east, and when he felt it, he caught hold of the heliotrope, but that the motion was so great, he was thrown backwards. He distinctly says the motion passed away towards Marangkai peak, situated W. N. W. from his station.

Here we have, it is most interesting to find, two well selected points 26 miles apart, situated nearly due east and west of each other; at the first the waves were travelling eastward, at the second westward, this places the divergence of the forces between the two. How far this line would extend to the northward and southward, we have, or rather I have, no means of ascertaining with exactness, but it must resolve itself into a line of initial rupture, the intensity diminishing on either side. If my supposition, and what I shall endeavour to shew be correct, that the initial force exerted by this

earthquake lies upon a definable line, and not upon a centre, and that the waves of motion imparted to the earth's crust travelled away on both sides at right angles to that line of dislocation (if we may call it one,) it is not to be expected that such a rupture would be confined to a straight line, it would be more or less divergent at different points affected by rock masses below the surface; it might even bifurcate at any point on its course, and the effect on the surface might greatly diminish for many miles, and again shew with great severity. It must be, however, expected, that near the line, and particularly at the point where the disturbance is excessive, the direction would be very various, and the motion more like that of a chopping sea; or the undulations of the surface might merely rise and fall vertically, with but very little horizontal motion to any particular point of the compass.

From all the accounts that have reached me from distant quarters, —and I have but very few details as yet to work on,—Silchar seems to have felt its force more than any other place. I read in the *Englishman* that Nowgong suffered much, while Gowhatta in a much less degree. Again, a correspondent in Chittagong who appears to have been in a very favorable position for observation of what took place, states that the waves were travelling east with slight north-easterly direction; this would place the motion at right angles to a line south of Cachar to the west of his position. The direction noted by M. Lafont in Calcutta, was an east and west one, not from a central spot, say Cachar, but from a line drawn south-south westerly from that place into Tipperah Hills. It will be interesting to discover the direction of the earth-waves at Gowhatta and Nowgong.

At the junction of the Diyং and Kopoly they were travelling eastward and the shock was very severe indeed; in the Khasi Hills from the N. Eastward;* in the Garo Hills† from N. E. to S. W.; at Golaghat‡ it was from the Naga Hills i. e. the south-west; at Lukhimpoor§ from S. W. In these few instances, that I can now quote, the directions are not divergent from a centre, but from a line or curve. Looking at a map of this part of India, it must be at once

* On Lat. 25-40, Long. 92-45 from the East.

† Englishman of January 26th, 1869.

‡ Englishman

§ Englishman, January 27th, 1869.

apparent, how peculiarly Silchar is situated with respect to the neighbouring hill ranges. We find the N. Cachar Hills running east and west on its north, the low hills of the district itself, and those near the sources of Barak and Eerung, almost due north and south (or with their strike) on its eastern side. A closer acquaintance with the country on the north and at the base of the hills shews the great univalley flexure that exists there, while in the gorges, where the greater rivers from the interior find an exit, we see the magnitude and almost incomprehensible displacement of strata, east and west strikes altering to north and south in apparent inextricable confusion.

I will now return to what I have before brought to notice, *viz.*, that on a point somewhere intermediate between Shersfaisip and Mahadeo peaks of the North Cachar range of hills, the earth-waves travelled outwards east and west. On looking at a sketch of the ground, I was struck with the coincidence, that almost midway between the two peaks lies the remarkable gorge of the Jatinga, cutting diagonally through the strike of the outer mountain system. This gorge marks a great dislocation, and such a feature would as it were point to weak lines on the earth's crust, where when the subterranean forces are exerted, they will again be felt with greater severity on the surface, and spread away on either side. Almost immediately opposite the gorge of the Jatinga lies Silchar and the area that has suffered most. The position with reference to the hills around, points to one of all others, where crushing and grinding together of the rocks would result on any motion being communicated from below to it and those neighbouring hill masses, and would result in upheaval of some spots and depression of others. It would be compressed, causing water with sand or mud to be forced up through the lines of bedding in the strata, and through the alluvium to the surface, a phenomenon apparently noticed all over the more level country.

I have not myself been in, and examined the Zilahs near Cachar, but I refer my readers to the Report of Mr. Medlicott on the *coal of Assam, with geological notes on the adjoining districts.** Pages 46,

47 and 48 can be read now with much interest; the crushing of the rocks near Silchar is prominently noticed; the dome-like shape of Kutigunah hill and its anomalous composition, probably owes its origin to some long past convulsions of this area. In fact from Silchar skirting the hills including the country near Sylhet for many miles to the west, it would appear as if local displacement by upheaval has played a considerable part in recent geological times towards shaping the present lines of the surface, and particularly will account for the detached hills of highly inclined strata, capped and often quite hidden with unstratified conglomerate and gravel, to be seen in many places. But this is entering on matter that would require much local observation and knowledge.

Returning to the N Cachar Range near Longitude 92° 50' it is equally interesting and remarkable, to find on the north, several deep gorges through the mass of but slightly inclined Tertiary sandstones and shales, that finally unite and form the Kopili river. This line of the Kopili also marks a great geological feature, namely, the up-throw of the Nummulitic limestone which to the east bends over with all the super-imposed strata, and takes an easterly dip, and is consequently not seen again on the Diying or other deep valleys still further east. On this line of upheaval of the limestone we find perennial hot springs, with very high temperature close to the Kopoli. Approaching nearer the valley of the Kopoli, I have the evidence of the people of the Naga village of Chinam, that the earthquake with them travelled east. I fully expect to receive in time information from numerous other points near this valley, and in the mean time I cannot but think that the line of origin of the disturbance carried north of the main range lies down the valley of the Kopoli, and with the up-throw of the stratified rocks against, or on the metamorphics. I hope to be able to illustrate this by a map, shewing with arrows the exact position where the direction of the shock was noticed, and I am sure if like information can be collected by any one in Tipperah and Chittagong, that some interesting matter for speculation and thought would result. Enquiries are necessarily to be made at numerous places, and although much of such data will be that supplied by natives it is valuable. It is all we can get, and must be made the most of, and only by the accumulated

data of each succeeding convulsion, can we hope to become better acquainted with the forces and action of such phenomena.

The first shock after the great earthquake was not severe, the motion being very quiet and swaying, no shaking whatever. The second was a very peculiar vertical motion, a regular thump from below, followed by another precisely similar in 20 seconds. The greatest number of shocks occurred between 6 p. m. and 8 p. m., that at 6-32 lasting a minute. A very gentle motion and tremor occurred about 6 p. m. The hoolooks who had long retired to rest were evidently disturbed by the shocks, and were heard in the forest close by.—After this date, the most decided shock was on the 14th January at 8-30 in the morning, and another on the 17th was also severe,—two distinct waves at about 12 p. m.

Very noteworthy is the distant report of a heavy gun on the 19th January, heard towards the west at 1-49-19 p. m., the time I took immediately by chronometer as I fully expected a shock to follow. Another very loud explosion was heard from Mahadeo peak at midnight of the 29th; and again from the same peak, at 7 a. m. next morning the 30th, but no shock came after, on either occasion I may here mention that last cold weather, on several occasions, when I was in the North Cachar Hills I heard at various times, the like distant reports, resembling exactly the firing of big guns at a great distance. In one or two places the country people had noticed it, and they even used the expression that it proceeded from the earth. These subterranean explosions must be heard over large areas, and it would be interesting if they could be noted, or rather if those hearing them, would make the matter public; I have no doubt there are many individuals who will remember having heard such sounds.

During the whole period of disturbance here, it is my belief that the ground has scarcely been in perfect rest, for any continuous length of time, certainly up to the 20th, and that a seismometer would have recorded many a movement imperceptible to the senses. When observing with a 12-inch theodolite at Mahadeo, the instrument has been repeatedly thrown out of adjustment and the exact time and motion unknown, and unperceived, save by the alteration of level. On one perceptible shock, the ground was trembling long after we had ceased to feel it. This the bubble shewed for quite 2 minutes and when

set east and west, kept shifting regularly by jerks about 1 degree of the scale. Regarding levels of the country, in one so mountainous and covered with forest, only very great displacements could meet with observation; in the plains of Cachar and Sylhet they appear to have been great, and there they would be peculiarly easy of observation in the beds of streams, &c. It would appear to have affected streams a good deal and to have caused a rise in them. The small stream west of Assaloo increased considerably afterwards, and was of course very muddy. Men proceeding to Cachar from my camp, found the ford at Pani Ghat much deeper by more than a foot on their return, and they re-crossed it 6 days after the first great shock; they said also that all minor streams had more water in them. In the table attached, I give all the shocks recorded here up to the 2nd February, on which day the last took place.

The Nagas about here do not remember any earthquake like the present, but have some tradition of former disturbances, many years ago. They all say that the crops will be particularly fine this year, and believe it will be due to the visitation,—a parallel to the good vintage of the comet year.

describing the shocks of Earthquakes on 10th January, 1869, and following date, at Ascalo, Lat. 25° Long. 93°

Date.	No.	H.	M.	S.	Intervals.		Time noted with chronometer, corrected by observation of the sun on the morning of the 12th, and its rate by several subsequent observations.—Time noted with watch, corrected with chronometer.
					H.	M.	
10th	1st	5	...	47	...	...	...
	"	5	1	7	...	20	Period of greatest intensity. Direction from W. by N. to E. by South.
	"	5	3	17	...	30	Time it lasted, but the Earth continued in a tremor for some time even after this.
2nd	5	13	27	...	10	10	Interval from 1st shock, lasted 4 or 5 seconds, motion undulating, not very severe, watching chronometer at time.
3rd	5	53	47	...	40	20	Shock a jump, motion vertical. } These two were of exactly the same intensity and }
4th	5	54	7	...	20	20	strength. Ditto ditto.
5th	6	8	17	...	14	10	Slight.
6th	6	32	47	...	24	30	Lasted quite 60", gentle undulating motion and tremor continuous.
							Ended.
							Decided quiver.
7th	6	41	47	...	8	...	Very slight.
8th	7	5	47	...	24	...	Very slight.
9th	6	11	47	1	6	...	All smart shocks. The last the strongest.
10th	10	1	17	1	49	30	Rather strong.
11th	10	18	...	...	17	...	Two jars in succession.
	11	10	...	...	52	...	Slight.
	11	17	...	...	7	...	Very slight.
	11	26	...	...	9	...	Feeble.
	12	26	...	...	1	...	Ditto.
	12	28	...	...	2	...	Rather strong.
	13	31	...	...	3	...	Slight.
	13	36	...	...	5	...	...
	5	30	...	...	...	...	...
	7	20	...	...	...	...	...
11th							These last lettered shocks were noted with a clock, it stopped before the morning and unfortunately before its time had been compared with the chronometer, so that these times are only approximate.

11th	p. m.	9	26	...	With several during the night, all slight compared with those that took place before.
12th	a. m.	6	16	...	Slight.
12th	a. m.	9	43	30	Ditto.
12th	p. m.	2	28	...	Felt at Mahadeo slight. Earth in tremor for a long time after it was felt, as shown by the bubble of Theodolite, which was at the time levelled for vertical readings.
14th	a. m.	8	32	...	A very smart shock.
16th	p. m.	10	45	51	Slight shock.
16th	p. m.	4	34	21	Ditto
		p. m.	6	13	Vertical jump.
17th	p. m.	11	51	6	A severe shock, two distinct waves.
18th	a. m.	7	...	...	About 7 a. m., slight.
18th	p. m.	1	48	23	No shock, but sound of an explosion, like a distant piece of heavy ordnance fired on the west.
20th	p. m.	2	...	...	Slight shock felt while observing angles at Mahadeo. H. S. about 2 p. m.
21st	a. m.	4	...	...	About this hour, very slight.
21st	p. m.	6	45	...	Ditto, the last felt for several days.
22d	mid.	...	...	...	About midnight a very loud report of explosion heard to the south of Mahadeo, H. S.
23d	...	...	...	...	Latitude 25° Longitude 98°.
23d	between	{ 11 30 }	...	...	Another fainter, heard about 7 a. m. on the same peak.
23d	between	{ 12 0 }	...	...	Slight shock felt in camp. Observing angles this day on Mahadeo peak. Level of the instrument 13°. Theodolite was thrown out in very unaccountable manner and certainly was not accidentally touched. After leaving it for breakfast, found it again thrown out of level; this was the time a shock was felt in camp at the base of the mountain.
Feb.					Shock very marked.
1st	a. m.	12	30	40	Very slight, just perceptible.
"	a. m.	8	...	64	Another reported by natives occurred about 5-30 a. m. and was distinct, and noticed by several.
2nd	p. m.	5	50	19	Very slight.

Upon the invitation of the President, Mr. Leonard gave a short account of his recent visit to Cachar. He stated that the reports regarding the severity of the earthquake, and especially as to its action in rupturing the earth, were considerably exaggerated ; early reports were decidedly so, most people being so much surprised and alarmed by the shock and its results, that they seemed to be incapacitated at the time for making anything like accurate observations, and hence very great caution should be observed in accepting information as to the intensity of the shock, or as to the direction of the wave. He could vouch for the fact, that highly exaggerated and most incorrect accounts had been received by himself on the subject.

Regarding the point of greatest intensity, he was first inclined to think it was about Silchar, or even more to the west ; but since he returned from Cachar, he had an opportunity of seeing a letter from Doctor Brown, the resident at Manipoor, whose account seems to show that the shock had been as severe at Manipoor as in Silchar. To the south of Silchar the shock—judging by the land slips caused—seems to have been felt less than in the station, and to the northwest along the road to Cheera Poonjee, for instance, the effects were decidedly less.

There was great difficulty in deciding, from the observation of facts, the direction of the wave. Statements of individuals were generally to the effect, that the movement was from about the south. The church tower fell to the north : but an unfinished building of Messrs. Snells, which consisted almost entirely of unsupported pillars, was thrown down in all directions ; the pillars were free to fall in any direction and they really fell to all four points of the compass. Mr. Leonard said, it might be worth noting that houses, with the ordinary Indian flat roof all stood, while most of those with roofs which did not give support to the walls were thrown down or damaged.

He stated that the photographs of damages done by the earthquake, were calculated to give an exaggerated idea of the extent of disturbance of the earth. The disturbances in every case which he had seen, were caused by the slipping in of the banks of the large rivers, or of old river beds, or partially filled up jheels ; though he had travelled through the disturbed district for over one hundred and fifty miles, he had not seen a single case of disturbance or fracture of solid ground, unaffected by rivers or jheels running through it. Many of the slips along the river banks were very extensive, in some cases being con-

tinuous for half a mile in length, from five hundred to fifteen hundred feet in width, and the depths of the depression varied from a few feet to thirty feet. Very large quantities of sand and water were thrown up; but he considered that in every case the forcing up of the semiliquid matter was due to subsidence of the firm ground above.

Mr. Leonard stated that the great majority of people said that the water thrown up was cool, a few, however, stated that it was decidedly warm, generally the evidence went to show that it was very little if at all warmer than ordinary water. However as Dr. Oldham had gone over the ground with the special object of studying the whole question, there can be no doubt that we shall soon be in possession of the best collection of facts, and the soundest deductions from them which it is possible to supply.

The President remarked upon the general interest attached to the observations of earthquakes, and expressed the hope that we may get more information on the subject.

Dr. Stoliczka said that, if there were a distinct stratum of sand below the layers of surface clay or soil, the throwing up of sand and water, which during former earthquakes (as that of Lisbon) had attracted so much attention, would be very easily explained. It is almost a natural consequence that, as soon as the fissures in the surface were formed, the slightest undulating motion (which it partially must have been), would shift and throw up the loosened sand; the force with which it was brought up to the surface, would, however, depend upon the local pressure under which the sand and the water stood.

Mr. H. F. Blanford mentioned that he had also obtained in many instances contradictory reports. Up to this time he was perfectly unable to form a correct idea as to the velocity with which the wave travelled. The increase of the temperature of the water appears to be remarkable. In one case, he was informed that the water which came up through one of the fissures had a temperature 9 degrees higher than the annual mean temperature of the locality. This increase was, however, more likely the result of chemical agents, as for instance, decomposition of organic substances &c., than to the great depth from which it had been supposed to have come up.

Mr. Leonard remarked that local pressure upon the underlying strata had also to be taken in account, in cases where an increase of the temperature of the water had taken place.

V.—*Ornithological notes, chiefly on some birds of Central, Western and Southern India*; by W. T. BLANFORD, F. G. S., C. M. Z. S. (Abstract.)

Mr. W. T. Blanford said that it was unnecessary to take up the time of the meeting by reading the paper in detail; it consisted chiefly of notes on the distribution, breeding, and habits of some of the less known birds of India. Since the publication of Dr. Jerdon's invaluable work, by far the most important publication on Indian Zoology ever printed, the study of Indian birds had been very greatly facilitated, and it became now an object to complete the information concerning them. In several instances, many of them pointed out by Dr. Jerdon, additional data were required, especially concerning distribution. Mr. Blanford had had rather favorable opportunities, when travelling about India on the duties of the Geological Survey, of seeing the fauna of different parts of the country, and he only regretted that he had not taken more complete notes.

As an instance of the interest of the subject, he would point out that he had been able to add several additional observations to those already recorded on the differences between both the migratory and non-migratory birds of Eastern and Western India, employing the name India in the way in which it is generally understood in India, and not in that in which it is equally generally misunderstood in Europe, and restricting it to the Cis-Gangetic Peninsula. Thus the common red-breasted fly-catcher of Bengal, *Erythrocercus leucura*, was not met with at Nágpúr, while the European *E. parva* abounded. In the same way *Saxicola opistholeuca* and *S. atrogularis*, *Circus cyaneus* and *Emberiza Huttoni* were all found at Nágpúr, or at Chanda still further south, not one of which has been met with in Bengal. On the other hand, Mr. Blanford had never seen a specimen of *Circus melanoleucus* or of *Gallinago stenura* in Central or Western India. They might occur, but probably only as stragglers, as neither appears hitherto to have been recorded.

Some of the non-migratory birds also, especially those which are Malay forms, do not appear to have so wide a range as is generally supposed. Thus neither *Carpophaga sylvatica*, nor any species of *Osmotreron* appear to be found in the great forests of the Lower ~~Barbudda~~ and Taptee vallies. Mr. Blanford had been throughout

these forests, and could scarcely have overlooked so very conspicuous a bird as the Imperial pigeon, for even had he not been looking for birds in general, he would certainly have killed such an excellent addition to a jungle dinner, if he came across it. Neither did he meet with either of these pigeons in the great woods near Chanda, while he saw both near Sironcha on the Godavery, and both were found in Orissa

Some of the birds noticed were of great variety, such as *Salpornis spilonota*, *Hirundo fluvicola* and *Cyornis Tickelliae*.

VI.—*Descriptions of some species of Reptiles and birds supposed to be new to the Indian fauna*; by A. E. CARLLEYL, Esq. (Abstract.)

Dr. Stoliczka said that the paper, which is of considerable length, mostly contains the descriptions of species which Mr. Carlleyl collected near Agra, and which he supposes to be new. A detailed description is given of a species which appears closely allied to *Varanus lunatus*, and which belongs to the group of land—*Varani* for which Fitzinger suggested the name *Psammosaurus*. A new species of water snakes, closely allied to *Ferania* of the *HOMALOPSIDE*, is also described, and photographs of this species, as likewise of the former one, accompany the description. This species of watersnakes was found in the river Jumna, and is being described by Dr. Jerdon in his forthcoming work on the Indian Reptiles.

Of birds, four species are noticed, all supposed to be new; one is a small water-hen, probably a species of *Porzana*, from the neighbourhood of Calcutta; the other a *Motacilla* (shot at Agra) which may prove to be a plumage variety of the *Dukhanensis* or *personata*. Further, descriptions are given of two large eagles, one of which at least seems closely allied to, or identical with, *Aquila imperialis*.

Mr. Carlleyl hopes that he will be able to supply accurate drawings of all the species, and until these have arrived, it would be impossible to pronounce an opinion upon several of the supposed novelties.

LIBRARY.

The following additions have been made to the Library since the last meeting, held in February.

Presentations.

* * * Names of Donors in Capitals.

Journal Asiatique, No. 45.—THE ASIATIC SOCIETY OF PARIS.

The Anthropological Review, No. 24.—THE ANTHROPOLOGICAL SOCIETY OF LONDON.

Bulletin de la Société de Géographie, October, No. 21, Vol. XVI.—THE GEOGRAPHICAL SOCIETY OF PARIS.

Mittheilungen der K. K. Geographischen Gesellschaft in Wien.—THE GEOGRAPHICAL SOCIETY OF VIENNA.

Pubblicazioni del Circolo Geografico Italiano, fasc. I.—THE GEOGRAPHICAL SOCIETY OF TURIN.

Indische Streifen von A. Weber.—THE AUTHOR.

Über die Krishna Janmáshtami von A. Weber.—THE AUTHOR.

Alloquium Latinum ad Indicarum Academiarum Cancellarios, scriptum a Lingam Lakshmanji Pandito.—THE AUTHOR.

The Calcutta Journal of Medicine, No. 12.—THE EDITOR.

Memoirs of the Geological Survey of India, Vol. VI. Part 3.—THE SUPERINTENDENT OF THE GEOLOGICAL SURVEY.

Records of the Geological Survey of India, Vol. II. Part I.—THE SAME.

Report of the Committee of the Bengal Chamber of Commerce for 1868.—THE BENGAL CHAMBER OF COMMERCE.

Minutes of the Trustees, Indian Museum, for September, 1866, to March, 1868.—THE GOVERNMENT OF BENGAL.

Purchase.

Revue Archeologique, XII. 1868.

Revue des Deux Mondes, December, 1868, and January, 1869.

Revue et Magasin de Zoologie, No. 11, 1868.

Journal des Savants, November, 1868.

Comptes Rendus, Nos. 18 to 24, 1868.

The American Journal of Science and Arts, No. 138.

The Annals and Magazine of Natural History, No. XIII. Vol. 3.

The Westminster Review, January, 1869.

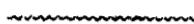
Günther's Zoological Records, Vol. IV.

Grimm's Deutsches Wörterbuch, Vol. IV. Part 2 and Vol. V.

Reise der Österreichischen Fregatte Novara, Zoologischer Theil, Part I.

Lacordaire's Genera des Coléoptères, Vol. VIII.

Simpson's India, Part 3.



PROCEEDINGS
OF THE
ASIATIC SOCIETY OF BENGAL,
FOR APRIL, 1869.

The Monthly General Meeting of the Society was held on Wednesday the 7th instant, at 9 o'clock p. m.

T. Oldham, Esq., LL. D., President, in the chair.

The minutes of the last meeting were read and confirmed.

The receipt of the following presentations was announced—

1. From Babu Yadunātha Basu,—a Mahomedan copper coin.
2. From J. Avdall, Esq.,—a Persian MS. of Hafiz.
3. From W. Stokes, Esq.,—A copy of “Kurzer Abriss einer Lautlehre,” von A. Schleicher.
4. From the same,—a copy of “Grundzüge der Griechischen Etymologie,” von G. Curtius, vol. I
5. From the Rev. J. Long,—A copy of ‘Histoire critique de Manichée et du Manicheisme par M. de Beausobre,’ 2 vols.
6. From the same,—A copy of Kriloff's Fables, illustrating Russian Social life.
7. From the Commissioners of the Department of Agriculture, U. S. A.—A copy of Annual Report for 1866.
8. From the same—A copy of Monthly Report for 1867.
9. From the Englishman Office, — A copy of “Rapports du jury International de l' Exposition Universelle” of 1867.
10. From A. C. Carlyle, Esq.,—A copy of Notes, Numismatical, Palæographical and Archaeological relating to India, MS.

The President in laying Mr. Carlyle's MS. on the table, drew the attention of the meeting to the very good photographs of coins, partially belonging to the author, partially to the Riddel Museum at

Agra, where Mr. Carlyle is curator. These photographs and sketches are accompanied by short explanatory notes.

The Council reported that they had elected C. H. Tawney, Esq., a member of Council, in place of Dr. Thomas Anderson.

The following gentlemen duly proposed and seconded at the last meeting were balloted for and elected ordinary members.

E. D. Lockwood, Esq., C. S.

M. L. Fiegar, Esq., C. S.

Maulavi Kabir-ud-din Ahmad.

Dr. F. Day.

The Rev. C. Haeberlin.

The following gentlemen are candidates for ballot at the next meeting—

Lientenant-Colonel Newal, R. A., proposed by the President, seconded by Mr. Blochmann.

R. J. Leeds, Esq., C. S., Chunár, proposed by Mr. Irwin, seconded by Mr. Blochmann.

G. Nevill, Esq., C. M. Z. S., proposed by Dr. Stoliczka, seconded by Mr. G. Wilson.

S. Kurz, Esq., proposed by Dr. Stoliczka, seconded by Mr. Blochmann.

W. Oldham, Esq., LL D., C. S., proposed by Dr. T. Oldham seconded by Mr. Blochmann.

R. A. Gubbay, Esq., proposed by Maulavie Andoolatteef, seconded by the Hon'ble J. B. Kheur.

The following gentlemen have intimated their desire to withdraw from the Society;

J. Agabeg, Esq.

Capt. A. Pullan

Bábu Kedáranátha Banerji.

Reports on the late Earthquake received since the last meeting from the Government of Bengal, were laid on the table.

Major G. Pearse's letter, bringing to the notice of the Society Dr. McFarlane's belief of the existence of pre-historic remains of man near Rewah, was also submitted. Major Pearse writes, under date of "Cheltenham, 8th February, 1869," as follows—

"Dr. MacFarlane, of the Retired List, Madras Army, who was with Sir

George Whitlocke's column in the Mutiny War of 1857, has brought to my notice a circumstance which I place before you, as it may be deemed worthy of being enquired into, should it not have already been so. And should it have been so, I shall be much obliged by being informed where mention is made of it.

"Dr. MacFarlane states, that 10 miles from Simareea, which place is 14 miles from Rewah, at the Falls of the Tonse river, are pre-historic remains of an unusual nature;—in so far, that the mounds or barrows are flattish; that the stones encompassing them are around barrows of parallelogram form, instead of around circular barrows; that these barrows extend for miles, and are laid out as we lay out flower-beds, but that all the beds or barrows are of parallelogram form. I don't remember to have heard, or read, of this pre-historic sort of structure."

The President stated that the Council in communicating the above letter, wished to draw the attention of the members to these interesting relics, should any one of them have an opportunity to examine the locality.

The President then introduced to the meeting the Rev. Dr. Wilson, of Bombay, who delivered an address "on the prospects of Indian research," of which the following is a very brief abstract :

The Rev. Dr. Wilson, in addressing the chairman and the meeting shortly noticed how the Asiatic Society of Bengal was founded by that prominent Orientalist, Sir W. Jones. He stated how Colebrooke enriched the Society's transactions by his very learned and interesting researches into the history, antiquity, &c. of India: and how the subsequent minute investigations of European science have corroborated his statements. Professor H. H. Wilson, extended the investigations, first commenced by the learned founder of the Society, and his labours in the analysis and examination of the Puranas have elucidated the hitherto unknown origin of Indian customs and manners. He, it was, who translated the several dramatical works of the Hindus, and first brought to the notice of the European public, the beauties of the Sanscrit language. The Rev. Doctor also called the attention of the meeting to the unparalleled persevering ingenuity of Mr. James Prinsep, and particularly dwelt on his labours, connected with the decyphering of the edicts of Asoka. Thus, through the im-

portance which these works had upon history and language, the Asiatic Society of Bengal became the parent of almost all the other Societies of the kind.

Dr. Wilson then briefly mentioned how Mr. McIntosh founded the Bombay Branch of the Royal Asiatic Society, and spoke of the practical benefits derived from the labours of the Societies in India.

The Indian literature and history have greatly benefited by the study of the old classic writings of the Hindus, and he (Dr. W.) was gratified to say, that the progress which has been made in the publication of the Vedas, justifies the expectation that they will soon be completed in the hands of oriental scholars. The study of these Vedas is most important, not only in a historical point of view, but interesting, as shewing the simplicity of the character and customs of the people, and as connected with the origin of mythological ideas.

Dr. Wilson here read a long extract from the introduction to his forthcoming work, "on castes," in which he shewed the importance of the study of the Vedas.

These ancient writings make it now evident that there had been a considerable amount of civilization among the Aryans of this country, though their progress in this respect was not as large, as that of their brethren who travelled towards the west. It is most probable that the Indian Aryans were pastoral tribes, which spread over all the fertile country of the large valleys of India, but on account of the hostile attacks of the aboriginal races, they still were obliged to maintain an intimate connection, however distant their mode of wandering may geographically have necessitated their separation. Thus a sort of common social life was founded; religious views were developed, customs and laws of common intercourse established. Their religion, which was altogether in the hands of the priests, chiefly occupied itself with magic ceremonies, though a certain amount of philosophic ideas is observable through the whole system. Unlike the Aryans who migrated towards the European shores, and were susceptible to every influence of foreign civilization, the Indian Aryans shut up themselves from all foreign influence, preserving their own original and peculiar system of religion and other ideas of social life. This exclusion of foreign elements, Dr. Wilson, however, considered as probably disadvantageous to the progress of their civilization.

During the time of the Vedas, the Indian Aryans still were chiefly a pastoral people, though to a certain extent also agricultural, as shewn by the frequent mention of their herds of cattle, buffaloes, horses, camels, &c. Their wars with the neighbouring tribes shew that their military arrangements also must have been attended too. All these occupations were connected with a certain degree of industry, and in works of art they were by no means ignorant. They knew the art of weaving and spinning, the use of iron, copper, brass, &c., of which they possessed various instruments for agricultural and domestic purposes, as well as weapons for defence in time of war. The precious metals were worked to a large extent, and used as a kind of payment in exchanges, or as ornaments; the polishing and cutting of precious stones was equally well known. In war they had, like the Egyptians, chariots drawn by horses, of which they seem to have taken great care. Poisonous extracts of plants, and the intoxicating properties of other vegetables were then already in use, though probably more tolerated, than encouraged. Their commercial connections were also extensive, they must have had intercourse with the East as well as with the hilly country of the North, for the *pushm* was known to them. In support of all these and many other occupations of the people, Dr. Wilson read a very long list of names of artisans mentioned in the Yajur-Veda; among these names were such as ivory-worker, dealer in nectar, compounder of perfumes, confectioner, painter, actor, worker in coral, brass-founder, stone-cutter, destroyer of poison, cotton-dealer, &c., which undoubtedly shew a high state of civilization.

Dr. Wilson stated that the Asiatic Society of Bengal first commenced the printing of the Rig Veda, when Professor Max Müller, under the patronage of the Hon. E. India Company began his edition of the Veda. The Society had also the greatest share in bringing to light the Vedic literature of the Brahmans. Dr. Haug of Bombay had published the text of the Aitareya Brahmana of the Rig Veda, which was of very great interest, and Dr. Weber's studies in the Yajur Veda, were equally acknowledged.

The *Aranyaka* lectures, delivered in the forest, and the *Upanishads* have been published by the Society. The difficulty of the meanings of Vedic words was here pointed out, as many explanations of the Vedic terms are conjectural.

The Society have also published the *Srauta Sutras* and the *Grihya Sutras*. The *Sutras* are directions for performing Vaidic ceremonies ; they are more recent than the *Vedas*. Dr. Wilson also referred to the numerous ancient *smritis*, fragments of which he had collected. The grammar of the Hindus, he stated, is a great evidence of the character of the Hindu mind. He mentioned that there were grammars in existence before Panini, and recommended that the native systems of grammar should be studied together with the European. As regards the styles of the Hindu poetry, he said they are not the very models of elaborate writing : Kalidasa's long syllabic words do not much beautify his poems. Several authorities were of opinion that Kalidasa flourished as late as the 12th century. Dr. Wilson admitted, however, that the Hindu poet was sensible to the beauties of nature, and is famous for his descriptions of Hindu scenery.

After these remarks on the labours of the Asiatic Society of Bengal, Dr. Wilson briefly stated the direction of the labours of the Bombay Asiatic Society. They had devoted their attention chiefly to Sanscrit and Pârsi, as also to the study of the numerous Buddhistic and Brahmanic remains, as regards structures as well as inscriptions. Of late they had, however, paid great attention to philological Grammars of Gujarati and to Vernaculars. He suggested that more attention should be devoted to the vernacular languages, and took this opportunity of mentioning Mr. J. Taylor's *Gujarâti Grammar*, recommending that similar Grammars of the other vernacular languages should be prepared.

The Rev. Dr. then stated in general, his views regarding the Aryan population of India and alluded to the numerous variations which the climate, and other causes, may bring forward in the human character. As regards the language, he stated that eight-tenths of Bengali words can be derived from the Sanscrit, but he expected that if investigations were earnestly begun, almost all may be traced ultimately to the Sanscrit. He further thought that people were sometimes too ready to refer Indian words to non-Aryan languages. As an instance, he derived the word *Pâre*, one-fourth of a *sera*, from the Sanscrit word *pâda*, and said that such interchanges of labials and dentals are not scarce. The non-Aryan words are certainly worthy of attention, but they ought always to be carefully

compared with the variations of the Sanscrit words. The Brâhui language, he believed, to be a cognate of the Telugu. He derived the word *Gond*, a tribe, from *Govinda*, and the *Koles* from *Kula*, a clan.

Dr. Wilson then briefly alluded to the progress that had been made in other branches connected with history and linguistic studies. He specially pointed out Mr. Campbell's Summary of the Ethnology of India. India has, he stated, true aboriginal races in large numbers, and he hoped that further study would largely elucidate our as yet very imperfect knowledge of the races.

The progress made in natural history in India, especially in botany and geology, were also briefly pointed out

In conclusion, Dr. Wilson referred to the great progress which the Society lately made in the study of the Persian and Arabic literature. Mr. Blochmann's translation of the *Ain-i-Akbari* he thought a very important publication.

The President, after having remarked upon the very large field of research which Dr. Wilson had noticed, proposed that the special thanks of the Society be given to the Rev. Dr. Wilson for his eloquent address.

The proposition was carried with acclamation.

The President, having requested Mr. W. S. Atkinson to take the chair, exhibited to the Society a number of photographs, shewing the results at Cachar of the earthquake which occurred on the 10th January, 1869. Two of these he had specially taken, as exhibiting, better than those views selected by the photographic artist, the peculiar result of this serious disturbance. These were, the gateway of the cemetery, which had been entirely overthrown, and a handsome and massive white marble tomb in the cemetery, the slabs comprising, which had been thrown from their original position to a distance, in the case of the topmost slab, of eight feet, carrying with them the iron railings of the tomb, and the chain, supported by wooden pillars, outside the fence. These two cases were quite consonant as to the direction of the great shock at Cachar, which was from 5° to East of North. Other facts confirmed these observations. And from the fall of the masses it will be possible to arrive at a knowledge of the celerity of motion of the wave particles, and possibly of the amplitude of the wave.

The results, however, of this great shock were complicated by those

produced by minor shocks, of which two at least preceded the greater shock, and several succeeded it. He (Dr. Oldham) had been able also to obtain some evidence tending to establish the angle of emergence, at several points of observation, which would shew the depth of the seismic focus, and also some readings of direction from other places than Cachar, which all pointed to a position under the Naga hills as being the source of the disturbance. Of all these full details would be given in report.

The most striking result of the earthquake, were the great fissures in the surface, and the sinking and swelling of the surface over a large area. These were certainly very remarkable, and had produced much damage, but they were in all cases only *secondary* results of the earthquake. They were exclusively confined to what was called by the people of the country the *bhurte* or ('filled in') land, there being no single case of their occurrence in the *kandy*, which might be called the old banks, of the river valley. But in every one of the many long curves which the river Baruk forms below Cachar, and for scores of miles, these fissures might be observed, greatest in amount near the river bank, but extending for miles across these peninsula-like extensions of the river flats. The cause of them became evident after a very little examination. All the country referred to, is composed of some 30 to 40 feet thick of hard clay, and sandy clay, which for thousands of square miles, rest upon a bed of 3 to 4 feet thick of bluish silt, or ooze, very porous and being highly charged with water. In this wet state the colour appears very much darker, and the whole looks of a deep greyish blue. The bed is about the level of the river at its present low water, or dry season height. The finely divided silt, or ooze, thus charged with water, formed a highly slippery or unctuous bed, on which the slightest motion would tend to make the heavy and more solid beds above to move, or slide. The shock came; this bed, and the large amount of water in it, were disturbed, the support of the beds above weakened, and in many places removed, and the necessary consequence was, that they fell in. The moment motion commenced, the soft silt below was squeezed out by the superimposed weight: and the entire thickness of the beds above slipped down or slid out, on the greasy surface; this motion producing cracks and fissures. Frequently the sudden pressure of this mass of some 30 feet thick above forced up the fine

sift through the fissures, or through any holes in the surface. At first it was in places driven out with the rapidity of a cannon shot, in a perfectly dry state, and gave one the idea of smoke issuing from these fissures, but almost immediately after the wet and slushy mud came up, and, overflowing the edge of the opening through which it had been forced out, formed a raised lip all round. If the watery mud continued to be forced up, it in many cases broke through the lip it had itself formed and flowed away in a kind of stream. But if not, or after the force had been exhausted, it gradually retreated again, and as it retired tumbled down the edges of the fissure through which it had been forced and eat them away into small conical hollows, which had been described as mud craters. Photographs, shewing all these peculiarities were on the table. Mr. Oldham stated that details of calculation &c. would all be given at a future time with a report on the facts.

A short discussion followed in which Mr. Atkinson, Rev. Dr. Wilson and a few other gentlemen took part.

Of the following papers short abstracts were partially read.

1.—*Notes of a translation of Balandshahar Inscription, by BABU PRATAPACHANDRA GHOSHA, B. A. (Abstract).*

This inscription records the grant of a village named Gandavá to a Gauda Brahman in Samvat 1233. The grant was made by Ananga, a king of Kalinga of the Rodra family. The inscription is in *Nágri* characters of the Kutila type, though some characters are quite modern. The language is Sanscrit. The copper plate measures 1 foot 9 inches by 1 foot 1 inch. It was presented to the Society by Mr. Webster, Collector of Balandshahar in February, 1867.

2.—*The history of the Burmese Race, Part III.; by COL. SIR A. PHAYRE, K. C. S. I., C. B. (Abstract.)*

This paper is the continuation of Col. Sir A. Phayre's article on the History of the Burmese Race which appeared in the philological part of the Journal for 1868. In that paper, the History of Burmah, as given in the Burmese chronicle *Mahd-rádzá-weng*, was brought down to the year 660 of the Burmese Era corresponding to 1298, A. D. In that year king Kyan-tswá, during the reign of whose father the Tátárs had invaded Burmah, was dethroned and eventually murdered by three brothers of the Shan race.

In the paper now laid before the meeting Sir A. Phayre traces the history of these three Shan brothers, and their successors and contemporaries to the year 1864, A. D., when Tha-do-meng-bya founded the city of Ava. The history of the successors of this king is then continued to the year 1555, when Bhureng Noungh captured Ava, and usurped the throne.

The period, therefore, of the history of Burmah, as described in this paper, extends from A. D. 1298 to 1555, a space of 257 years.

The paper will shortly be published in the Society's Journal.

Notes on the Famine-foods of Marwar; by Assistant-Surgeon GEORGE KING, M. B., lately attached to the Marwar Political Agency, —communicated through Dr. C. R. FRANCIS.

The substances resorted to by the very poor, as articles of food in times of famine, are probably pretty much alike in most parts of Northern India. With those used in our own provinces we are, unfortunately, but too familiar, yet as Marwar is a territory, of which most Europeans know so little, I have ventured to throw together a few notes on the substitutes for the ordinary cereals which are being used there, during the present severe famine. The accompanying specimens of the raw substances, and of the breads prepared from them, were obtained by me in October last, in the districts of Joudhpore and Pallee, from famishing wretches who were then subsisting largely on them.

The Marwarees, in common with the inhabitants of the neighbouring states of Jeysulmure and Bikaneer, are familiar with famine, or at least with scarcity. In all three states, the annual rainfall is extremely small. There are no accurate statistics on record, but that of Marwar may be set down at about 3 or 4 inches, which (with the exception of a very uncertain fall of about a quarter, or half inch, in the cold weather) is confined to the latter end of July, August and September. The rain-crops afford the staff of life, for owing to the scarcity of water for irrigation, and its depth* in many cases from the surface, the area of wheat cultivation is very limited, and pulses are grown scarcely at all. Wide tracts of land are hurriedly ploughed after the first shower of the rainy season falls, and *joar* and *bajra*

* In Bikaneer, some of the wells are more than 800 feet deep!

are sown. But even the fate of these crops is very uncertain, for if the scanty rainfall of 3 or 4 inches is not distributed in showers, falling at reasonable intervals they become stunted, and the yield of fodder (in these parts as important as grain) is insufficient for the support of the cattle. The crops having been reaped, these tracts lie quite fallow until next rains, and are almost undistinguishable from the surrounding "jungle," if the term can be applied to such a comparative desert.

The states, I have mentioned, are essentially pastoral. In Bikaneer, camels are reared in enormous numbers, and in Marwar the wealth of the people lies chiefly in their horned cattle, while in none of the three is sufficient grain grown for the support of its own inhabitants. After the rains, a scanty crop of grass springs up, which, with the dry stalks of the *hajra* and *joar*, affords the year's supply of fodder for the cattle. Camels find their chief food all the year round in the leaves and twigs of *Zizyphus*, *Salvadora*, *Acacia* and other jungle shrubs.

On the first symptoms of a failure of grass, the majority of the horned cattle are driven off under the care of the younger men to seek forage in Malwah or Guzerat, a few bullocks being left to conduct ploughing operations, should showers fall in time to give any hope of a rain crop, and to prepare the soil for the cold weather crop, small as it is. Poorer people who have no cattle, aged and infirm people, and children, do not leave the country until pressure for human food begins to be felt.

Last year so early as the middle of August, the wiser ryots had their flocks in motion towards Malwah, but as rain so utterly failed, many who put off their departure until a month later, were obliged to remain altogether on account of the weakness of their cattle, the impossibility of finding forage for them on the road, and the difficulty of getting food even for themselves. Not a few who had actually reached Guzerat, having sold their cattle and valuables, and being unable to find employment, returned to Marwar, preferring to die in their homes if it must come to that, and like true natives trusting for something to turn up. But the scarcity is not of food only but of water also, and many a poor wretch was, I believe, prevented from fleeing the country from his inability to walk from one well of sweet water to the next, much of the Marwar well water being brackish,

and the supplies of superficial water having of course been exhausted at an early period of the drought.

With reference to the general subject of scarcity and famine in Rajpootana, the conviction has been forced upon me that these are more common of late years than in times past. This is the confidently expressed opinion of many intelligent old Marwarees with whom I have conversed on the subject. Scarcity is indeed now quite a chronic condition in many parts of Marwar. There is no evidence to prove that this rises from increased population. The character of the government of the country, during the reign of the present and of the last two or three Rajahs, has not been such as to render that a probable solution; besides it is known that the population of the towns at any rate has decreased of late. On the other hand there is a strong impression among the inhabitants that the cause lies in a diminution of the products of the soil, due to a steadily increasing failure of rain. In the absence of meteorological records, the question cannot be settled, but I am inclined to think that this is the explanation.

Much attention has been attracted of late to the reciprocal influence of the vegetation of a district and its rainfall, and the old observation—that *as trees are cut, moisture is lessened*, has been abundantly verified. It is needless to say that in Marwar this principle is unrecognised, and that there is no system of forest conservancy. There does not appear to have been of late any unusual destruction of forest products. For ages the struggle for life in the plains of Marwar has been between men and cattle on the one side, and vegetation on the other. It is an unequal fight, and vegetation is now losing. Nothing is conserved; the few indigenous trees are cut down, and none are planted in their stead. Even shrubs are not spared. Any one who has seen the hedges from 6 to 10 feet high and about as broad, made of dead prickly shrubs, that surround a Marwar village and its fields, can understand what draits are made on the scanty undergrowth of the jungles for this purpose only. Many more are sacrificed in the preparation of “pala*” as fodder for cattle and camels, as well as for firewood. Herbaceous plants fare no better. These are nowhere

* “Pala” consists of the dried leaves of *Zizyphus*, the commonest jungle shrub in Marwar. To obtain it, the bushes are cut down and the leaves are shaken off the withered branches.

numerous, but on the first sign of drought, their roots are dug up as fodder for cattle, sheep and camels. By such measures not only is the influence of vegetation, as at once the conservator and attracter of moisture, interfered with, but the hard surface being broken up and loosened by the removal of the roots that bind it into consistency, the naturally light and sandy soil is exposed to the full force of the prevailing W. and S. W. winds.

The territory of Marwar lies between the Aravalli range of hills on the East, and the desert on the West, and the fertility of any part of it is in direct proportion to its distance from the latter boundary. At the base of the Aravalli lies Godwar, the garden of Western Rajpootana, while on the margin of the desert is situated the barren and inhospitable district of Mullanee. Sandstorms of long duration and great severity are extremely common at certain seasons, and they invariably blow from the west. Much that I saw and heard during a year's residence in Marwar leads me to believe that the loose sand of the west is gradually overwhelming the east, and as the process goes on, the reign of barrenness extends eastward.

It would be rash to say that the ruthless destruction of vegetation just described, is the sole cause of the alleged increasing frequency of scarcity in Marwar, but it may with safety be admitted that some attention to the conservation of forests (including in the latter term all the vegetable products of waste lands) would be likely to increase the supply of moisture in these regions. Every one knows the difficulty of planting trees in a dry district where the soil has been opened up to the influence of the sun and air, and where all shade has been removed by the cutting of trees.

Dry as Marwar is, however, several species of trees and shrubs could be successfully planted in the rainy season.

Chief among these are the three species of *Acacia*—*Arabica*, *leucophbra* and *Catechu*,—*Salvadora Persica*, several species of *Zizyphus* and *Capparis aphylla*. The two first mentioned are valuable as timber trees.

Should a railway, as is proposed, be laid down in Rajpootana, the subject will become one of importance to our interests, but without the interference of our Government, nothing whatever will be done by the native rulers, whose interests are really most affected.

The chief jungle products being used as food during the present famine in Marwar are as follows :—

1. *Mothee.* This is the root of *Hymenochacte grossa*, of the natural order *Cyperaceae*, a tall rush which grows on the margins of tanks. It is not eaten by cattle, but in times of famine the root is eagerly dug up for human food. The fibres and dark cuticle being removed, the solid part of the root is dried, ground, and made into bread, a little flour being sometimes mixed with it. The accompanying specimen of the bread I got from a man who, with his family, was making his dinner of it. Even when freshly made, the bread is dark brown in colour, and has a sour and earthy taste. Roots of other species of rushes besides that named above, are also collected under the name of "Mother," but not in any quantity.

2. " *Kejra* — The bark of *Aemic leucophloea*, a tree common in Rajpootana. Bread is made from the ground bark, with or without the addition of flour. It has an astringent bitter taste, and is far from palatable. On the principle of *experimentum in corpore vili*, I made my sweeper fare on it for a day. The poor man suffered a good deal of griping and discomfort in consequence. I found this to be the usual experience for the first few days that either this or *Mothee* are eaten, but ultimately the stomach gets accustomed to the nauseous food. The young pods of several species of *Acacia* are eaten as vegetables even during times of plenty, and such of their seeds as had ripened, were this season ground into a flour, but the quantity available was very small.

3. *Broont* or *Bharoont*.—The seed of *Achyranthes aspera*, a plant common all over the plains of India. When the outer covering of the seed has been removed, as in the specimen which I have forwarded, a wholesome looking grain remains. The bread made from it is very good, and is considered the best of all the substitutes for the usual cereals.

4. *Gokhur-Kante*.—The capsules of *Tribulus lanuginosus*, of the natural order *Zygophyllaceæ*, a decumbent herbaceous plant of wide distribution in India. From the difficulty of collecting it, this does not take a prominent place as a famine food. The unopened capsules are ground down into a rough kind of meal, but from the small proportion which the contained seeds bear to the tough fibrous tissue of

the seed vessel, the bread, of which a specimen is shown, must be indigestible, non-nutritious and irritating.

5. *Maleechha*.—The seed of a species of grass (probably an *Eleusine*.) I have no sample of the bread made from this; neither could I obtain any specimens of the plant itself, so as to identify it.

6. *Tilli*.—The refuse of the seeds of *Sesamum orientale*, remaining after the oil has been expressed. This is not made into bread, but is boiled with water into a kind of soup. The specimen, exhibited, was bought from a bunneah in Joudhpore bazar, who was selling it to an eager crowd at the rate of seven seers for a Company's rupee. In Marwar, this substance is largely stored up by bunneahs against seasons of scarcity. It keeps for many years without further deterioration than a darkening of colour.

7. *Seeds of various Cucurbitaceous plants*.—Watermelons of great size grow in a semi wild state in enormous numbers in Bikaneer, and some parts of Marwar, during the rains. The seeds of these, of cucumbers, pumpkins, and melons are stored up against scarcity. They make a not unpalatable bread.

With the exception of Tilli cake, none of the articles just enumerated can be had to buy. *Mothee* will not keep, but the others are hoarded up in their houses by the poorer people themselves for their own use when the crops fail. These hoards are however, insignificant, and are soon exhausted during seasons like the present, when in many parts of Marwar no rain whatever has fallen for more than a year.

Botanic Garden, Saharunpore, 25th January, 1869.

The reading of the following papers was postponed;

4. Contribution towards the knowledge of Indian **Arachnoidea** ; by Dr. F. Stoliczka.

5. Contribution to our knowledge of Pelagic Mollusca ; by Capt. G. E. Frayer.

6. Topographical features of Assam and their indications ; by Dr. J. Meredith.

LIBRARY.

The following additions have been made to the Library since the last meeting held in March.

* * * The Names of Donors in Capitals.

Presentations.

Journal Asiatique, No. 44.—THE ASIATIC SOCIETY OF PARIS.

Bulletin de la Société de Géographie, November and December, Vol. XVI.—THE GEOGRAPHICAL SOCIETY OF PARIS.

Proceedings of the Royal Society, Vol. XVII., Nos. 106, 107.—THE ROYAL SOCIETY OF LONDON.

Proceedings of the Royal Society of Edinburgh, Vol. VI. No. 74.—THE ROYAL SOCIETY OF EDINBURGH.

Transactions Royal Society of Edinburgh, Vol. XXV. Part I.—THE ROYAL SOCIETY OF EDINBURGH.

Journal of the Chemical Society, Vol. VI., 2nd series, October, November and December, 1868.—THE CHEMICAL SOCIETY.

Journal of the Bombay Branch of the Royal Asiatic Society, Vol. IX. No. XXV.—THE BOMBAY BRANCH, ROYAL ASIATIC SOCIETY.

Journal of the Statistical Society of London, Vol. XXXI. Part IV.—THE STATISTICAL SOCIETY OF LONDON.

Proceedings of the American Philosophical Society, Philadelphia, Vol. X. No. 77.—THE AMERICAN PHILOSOPHICAL SOCIETY.

Smithsonian Contributions to Knowledge, Vol. XV.—THE SMITHSONIAN INSTITUTION.

Ditto, Report 1866.—DITTO, DITTO.

Department of Agriculture, Report 1866.—COMMISSIONERS OF AGRICULTURE OF THE UNITED STATES OF AMERICA.

Monthly Report, Department of Agriculture, 1866-67.—DITTO DITTO.
UNITED STATES Coast Survey 1863-64.—THE GOVT. OF THE UNITED STATES OF AMERICA.

Memoirs of the Boston Society of Natural History, Vol. I. Part III. N. S.—THE BOSTON SOCIETY OF NATURAL HISTORY.

Annual Report of the Boston Society of Natural History, 1867-68.
—DITTO DITTO.

Conditions and doings of the Boston Society of Natural History.
May, 1867-68.—**DITTO DITTO.**

Annual Report of the Trustees of the Museum of Comparative Zoology, 1866.—**THE MUSEUM OF COMPARATIVE ZOOLOGY.**

The Public Ledger Building, Philadelphia, with an account of the Proceedings connected with its opening, June 20th, 1867.—**THE GOVT. OF THE UNITED STATES OF AMERICA.**

Rahasya Sandarba, Vol. V. No. 50.—**THE EDITOR.**

The Calcutta Journal of Medicine, Vol. II. No. 1.—**THE EDITOR.**

Schleicher's Vergleichende Grammatik.—**W. STOKES, Esq.**

Grundzüge der Griechischen Etymologie, von G. Curtius.—**W. STOKES, Esq.**

Histoire Critique de Manichée et du Manicheisme Par M. De Beau-sobre, Tom I, II.—**THE REV. J. LONG.**

Kriloff's Fables illustrating Russian Social Life.—**THE REV. J. LONG.**

Rapports du Jury international de l' exposition universelle, 1867.—
FROM THE ENGLISHMAN.

Hafiz MS.—**J. AVDAHL, Esq.**

Report on the Statistics of the Prisons of the lower Provinces of the Bengal Presidency for 1861 to 1865; by F. J. Mouat, Esq., M. D.—**THE GOVERNMENT OF BENGAL.**

British Burma Education Report, 1867-68; by P. Horden, Esq..
B. A.—DITTO DITTO.

Report on the Land Revenue Administration of the Lower Provinces for 1867-68.—**DITTO DITTO.**

Report on the Government Charitable Dispensaries, Bengal (Proper) for the year 1867.—**DITTO DITTO.**

Icones Plantarum Indie Orientalis, Parts I, II; by Major H. Beddome.—**THE GOVERNMENT OF INDIA, HOME DEPARTMENT.**

Purchase.

Revue Archéologique, No. 1, 1869.

Revue des Deux Mondes, 15th January, 1869.

Revue et Magasin de Zoologie, No. 12, 1868.

Tables des Comptes Rendus des séances de l' Académie des sciences, Tome LXVI.

Comptes Rendus, Nos. 15, 26, 1868.

Ditto ditto, Nos. 1, 2, 1869.

The Annals and Magazine of Natural History, Vol. III. No. 14.

The Annuaire des Deux Mondes, Vol. XIV.

The Edinburgh Review, No. 263, January, 1869.

Abhandlungen für die Kunde des Morgenlandes, Vol. V. No. 2

The Quarterly Journal of Science, No. 21, January, 1869.

The Kāmil of El-Mubarrad, Part V; by W. Wright.

Exotic Butterflies, Part 69; by W. C. Hewitson.

The History of the reign of Shah-Aulum.

The Ayn-i-Akbari MS.

Jacent's Geographisches Wörterbuch von F. Wüstenfeld. Dritter Band, Zweite Hälfte.

Elements de la Grammaire Assyrienne. M. J. Ménant.

Malisch Leesboek door H. N. van der Tunk.

Nalus Maha-Bharati Episodium, F. Bopp.

Cheneb, Nâmeh ou Fastes de la Nation Kourde, F. B. Charmoy.

Der Bundehesh, von T. Justo.

Japanese Grammar; by J. J. Hoffmann.

Vergleichende Grammatik, Erster Band, F. Bopp.

Reisen in Indien und Hochasien, Erster Band, von H. Schlagintweit.

Geschichte der herrschen den Ideen des Islams, von A. Kremer.

Elements de la langue Malaise, ou Malaye; par A. Tugault.

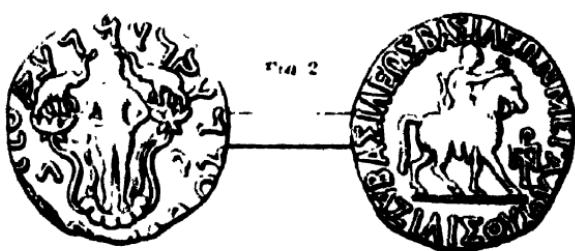
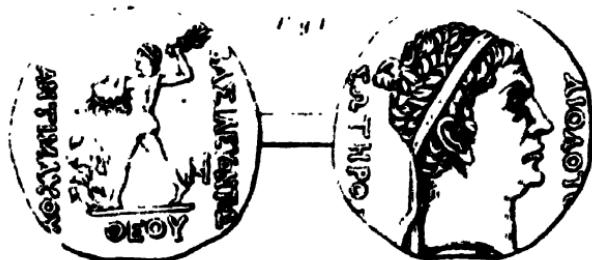


Fig. 1. Antimachus Thess.

Fig. 2. Aethes.

PROCEEDINGS
OF THE
ASIATIC SOCIETY OF BENGAL,
FOR MAY, 1869.

The monthly meeting of the Society was held on Wednesday, the 5th instant, at 9 o'clock P. M.

T. Oldham, Esq., LL. D., President, in the chair.

The minutes of the last meeting were read and confirmed.

The receipt of the following presentations was announced—

1. From Bábú Udayachándá Datta, Civil Surgeon, Purulia, through Bábú Rijendralála Mitra, a Sanscrit manuscript in the Uriá character, inscribed on palm leaves, containing—

(a.) A copy of the *Paryyáya-ratnamálá*, or a Vocabulary of Synonyms of all articles used in Hindu medicine, compiled by Mádhava Kara.

(b.) A treatise on Indian Materia Medica, entitled by the author *Nirghanṭá rája*, alias *Abhidhána-chudámaní*, but commonly known by the name of *Rájánirghanṭa*. The author's name is differently given at the end of the different chapters of the work, as Narahari, Narasingha and Nṛihari. The manuscript is incomplete, containing only the first seventeen chapters.

2. From the Rev. Dr. F. Mason,—the *Toungoo News*, Vol. V. No. 1.

The following gentlemen, duly proposed and seconded at the last meeting, were balloted for, and elected ordinary members:—

Lieutenant-Colonel D. J. F. Newal, R. A., Mean Meer.

R. J. Leeds, Esq., C. S., Chunar.

G. Nevill, Esq., C. M. Z. S.

S. Kurz, Esq.

W. Oldham, Esq., LL. D., C. S.

B. A. Gubboy, Esq.

The following gentlemen are candidates for ballot at the next meeting.

J. Schroeder, Esq.

Proposed by Dr. F. Stoliczka, seconded by Mr. Blochmann.

J. Leupolt, Esq., C. S., Goruckpur.

Proposed by the President seconded by W. Oldham, Esq.

T. W. Rawlin, Esq., B. C. S., Assistant Magistrate, Allahabad.

Proposed by Lieutenant-Colonel A. S. Allan, seconded by Mr. Blochmann.

Bábn Udayachánda Datta, Civil Surgeon, Purulia.

Proposed by Bábn Rajendralála Mitra, seconded by Mr. Blochmann.

W. C. Bonnerji, Esq., Bar.-at-law, Calcutta.

Proposed by Maulavi Abdul-lateef Khan Bahádur, seconded by the Rev. J. Long.

The following gentlemen have intimated their desire to withdraw from the Society—

Colonel P. S. Lumsden.

T. Martin, Esq.

Mr. H. Perkins' election, in August last, was cancelled at that gentleman's own request.

The Council reported that, on the recommendation of the Finance Committee, they have sanctioned the sale of Government Securities belonging to the Oriental Publication Fund to the amount of Rupees 1500, to pay off Printer's bills.—

That they have adopted the following recommendations of the Philological Committee.

1. The Philological Committee recommend that Mr. J. Beames be permitted to edit the poems of Chand for the *Bibliotheca Indica*; that he be requested to embody the different readings of the Benares and Agra MSS, in the results of his collation of the two MSS, consulted by him in England, and that the Government of the N. W. Provinces be requested to sanction the lending to Mr. Beames of the Agra MS., now in the keeping of the Society;—that when the copy of the Baidlah MS. is received, it be put at his disposal for collation.

2. The Committee also recommend that the following works be published in the *Bibliotheca Indica*:—

a. Tándya or Panchaviñña Bráhmáya of the Sáma Veda with commentaries, to be edited by Pandita Anandachandra Vedántavágis'a.

- b. Láthýáyána Sutra with commentaries, to be edited by the same.
- c. The smaller Upanishads with commentaries, to be edited by Pandita Rámahmaya S'íromáṇi.
- d. Gobhila Sutra with commentaries, to be edited by Pandita Chandrakánta Tarkálankára.
- e. Váyu Puráṇa, to be edited by Bábú Pratápachandra Ghosha.
- f. Agni Puráṇa.

And that MSS. of the commentaries of the Gopatha Bráhmaṇa of the Atharva Veda be solicited from the Madras College Library through the Director of Public Instruction, Madras, and that other measures be taken to procure the MSS. of Vridhá Parásara Smṛti and Vyavahára Tilaka.

Bábú Rájendralála Mitra writes on the subject, as follows :—

“ Owing to the departure of Mr. Cowell from this country, the death of our late indefatigable editors, Panditas Rímanáráyana Vidyáratna and Premachánda Vidyávágis a, and some other causes, the Sanskrit department of the Bibliotheca Indica has been, for the last three years, progressing very slowly, and the expense per annum, instead of coming up to half the amount of the annual grant of Rs. 6000, has seldom exceeded Rs. 2,000. It is desirable therefore, that measures should be taken to give a fresh impetus to the department, by the employment of a body of new editors, and the commencement of a new series of works. This is the more necessary, as the recent Government grant of Rs. 3,000 per annum, renders it obligatory on us, to send such a number of works to press as will involve an expenditure of at least five to six thousand Rupees a year.

“ The works now in the press, with three exceptions,* are all near completion, and the excepted works, owing to their nature and the scant leisure of the editors, are not likely to be printed very rapidly, nor cost more than Rs. 1000 a year. Indeed, as a general rule, Sanskrit editors, whether European or Indian, have not, within the last ten years, brought out more than 2 to 3 fasciculi of the Bibliotheca Indica a year, and as each fasciculus, at an average, costs about Rs. 800, it will be necessary to send at least ten differ-

* Taittiriya Sanhítá, edited by Professor Mahes'achandra Nyáyaratna.
Mimíśá Darsana, do. do.
Kámandakiya commentary, edited by Pandita Jaganmohána Tarkálankára.

ent works to the press to keep up our expenses to the amount stated above. Accordingly I beg to propose the following, in addition to those which are now in hand, for the consideration and approval of the Philological Committee.

"The works to which our attention should be first directed, according to the Government letter, are the *Vedas*. Of these a *Saṅhitā* and a *Brāhmaṇa* each, of the *Rig* and the *White Yajurs*, have already been published in Europe, and a *Saṅhitā* and a *Brāhmaṇa* of the *Black Yajurs* are in a forward state in the *Bibliotheca Indica*; the *Brāhmaṇa* awaiting only an *Index* for completion. Of the *Sāma*, Mr. Stevenson has published a *Saṅhitā*, and of the *Atharva*, Drs. Roth and Whitney have likewise published a *Saṅhitā*, but no *Brāhmaṇa* of either of those works has as yet been printed. I am of opinion, therefore, that the Committee should first take up the *Brāhmaṇas* of those *Vedas*.

"According to *Sāyana Achārya* eight *Brāhmaṇas* of the *Sāma Veda* are still current,* and of them the *Tūṇḍya*, otherwise called the *Panchavīṇī Brāhmaṇa* is the largest and most valuable. It embraces the whole liturgy of the *Sāma Veda*, and a great number of traditions which cannot fail to be of interest to the oriental scholar and the Indian historian. MSS. of this work are easily accessible; the Society has two good ones in its possession, and there are four in the Library of the *Sanskrit College* of *Calcutta*, one of which is three hundred years old. The *Benares College* has one, and I expect another from Professor *Picksford* of *Madras*. Three commentaries are likewise available; and these, I believe, will suffice for a carefully collated standard edition of the text and comment. *Pandita Anandachandra Vedāntavāgīśā*, the chief priest of the *Brāhmaṇa* *Sabhā*, is willing to undertake the work at the same rate at which he has lately edited the *Āśvalāyana Sūtras* for us, (*viz.*, 1 Rupee per page), and I think him to be fully qualified to do justice to it.

"Of the *Atharva Veda*, the most important, and perhaps the only extant, *Brāhmaṇa* is the *Gopatha*. Professor *Kuhn* of *Berlin* has lately urged Mr. *Whitley Stokes* to exert his influence in getting it printed, and Mr. *W. Stokes* has written to me, expressing his earnest wish that the Society should have the needful done, if possible.

* *Vide my Introduction to the Chhāndoga Upanishad, and Max Müller's Sanskrit Literature.*

MSS. of the work, however, are very scarce. The Society has an only copy, and that a very imperfect one; and I have lately got another from Benares, but that also is incomplete. The work besides is very difficult to understand, and no editor in Calcutta, that I know of, can do justice to it without the aid of a commentary. It would be necessary, therefore, should the Committee resolve upon printing it, not only to procure more MSS. of the text, but also codices of two or three commentaries. Mr. Burnell of the Madras Civil Service once wrote to me, that he had a copy of the commentary, but as he is now in Europe, I cannot get the loan of it. There is one, however, in the library of the old Madras College, and this may be obtained through the Director of Public Instruction at Madras, or the Secretary to the Madras Government.

"As sequels to the Brāhmaṇas, the Upanishads come next in order. According to the most recent calculations, there are between 130 and 140 of them still extant, of which MSS. between 70 or 80 only, are accessible in Calcutta. When Dárá Shikoh prepared his Persian translation, he could obtain only 60, and Dupetron, in the last century, got no more. The Society has published only 12 out of the number now available, and the remainder therefore may be sent to press to advantage. Professor Max Müller strongly recommended them in a letter published in the Journal for 1862; and as they are mostly very small, not more than 8 or 10 to 20 pages in extent, they are not likely to occupy more than two fasciculi of the Bibliotheca, nor cost at the outside more than 7 to 8 hundred rupees. Professor Ráma-maya Sironapi of the Calcutta Sanskrit College is willing to edit them at the usual rate.

"Next to the Vedas stand the Sutras, and of them I have to propose two, *viz.* the *Léshyáyana* and the *Gobhila-grihya* Sútras of the Sáma Veda. They are both founded on the Tándya Brāhmaṇa, and for antiquity and interest stand high in rank. MSS. of both are easily accessible, and they may be at once taken up. Pandita Chandrakánta Tarkálankára of Mymensing has offered to edit the last, and I would suggest that his offer be accepted. He is a profound Sanskrit scholar, and will not fail to acquit himself creditably in the undertaking. The work will fill just one fasciculus, and cost about 250 Rs.

"As the *Léshyáyana* Sútra is a sort of exegesis of the Tándya

Brahmanga, Pandita Anandachandra will, perhaps, find it convenient to edit it along with the Tändya.

" Mr. Griffith has lately suggested that the Society should carry on the continuation of the *Mahābhāshya* from the place where Dr. Ballantyne dropped it, and Professors Bāla Sāstrī and Rājārāma Sāstrī have since expressed their willingness to undertake the work.

" As to the importance of the work as the great store-house of Sanskrit philology, there can be no difference of opinion. Nor can there be a question as to the propriety of the Society undertaking it, for it is certain that no private enterprize will ever take up so voluminous and at the same time so unsaleable a work. But it will have to be decided whether it ought to be printed from the place where Dr. Ballantyne stopped, or begun from the commencement. Dr. Ballantyne printed about one-third of the work on 808 folia, and it would effect a saving of over 3000 Rs., if we follow him. But on the other hand, he adopted the old Indian *puthi* form, and we must, for the sake of uniformity, give up our handy 8vo., and agree to unwieldy oblong loose sheets which will nowhere be welcome. Dr. Ballantyne's edition, besides, is out of print, and new purchasers of our edition will be called upon to accept a book which they can never get completed.

" The portion that remains to be printed will fill about 1600 octavo pages, and cost Rs. 5000. If we print from the beginning, the cost will be about Rs. 8000 payable in five or six years.

" MSS. of the work are very scarce, except at Benares, where there are several teachers of the *Bhāshya*.*

" Of works on law, I would suggest the *Uddha-pārāsara Smṛiti* and the *Vyavahāra Tilaka* of Bhavadeva. The former is an authoritative text-book, and the latter a scarce and very learned compilation. Should we resolve upon printing them, measures should be taken to procure MSS. I know of only one MS. of the latter in Calcutta.

" Professor Max Müller, some time ago, recommended the Vāyu Purāṇa as the oldest and most interesting of the Purāṇas. Our Assistant Secretary, Bābu Pratāpachandra Ghosha, is willing to undertake it, and as MSS. of it may be had in abundance, I would suggest that it be at

* Since writing the above, I have learnt that the work has already been sent to press at Benares under the auspices of His Highness the Mahārāja of Jaunagarum.

once taken in hand. I have no doubt my young friend is fully competent to do the work well."

3. With reference to the letter of the Government of Bengal, on the publication of catalogues of Sanskrit MSS., the Philological Committee recommend that the plan proposed by Bábú Rájendralála Mitra be adopted ; that a pandit employed at 30 Rs. per month with travelling allowances under the superintendence of the Philological Committee will work very well ; that the Rev. J: Long and Bábú Rájendralála Mitra be deputed occasionally to report on the native libraries in the Presidency.

The following is an extract from Bábú Rájendralála Mitra's memorandum on the subject :—

" The proper plan would be to employ a pandit on Rs. 30 a month and travelling allowances, to collect information with reference to the nature and extent of the literary treasures which the libraries in the different *cols* and *maths* of the country contain, as also those of private gentlemen and others ; and acting upon the information which will be furnished by him and by such educational and other Government officers to whom lists of desiderata may be sent, and who may interest themselves in the undertaking, to depute a member of the Committee to examine and report on such collections as may appear to be most promising. This plan is now being followed with great success by Dr. Bühler at Bombay, and it will, no doubt, prove more effectual and economical than to depute an officer of a higher standing, whose time will be more valuable, and whose movements, more costly. Brahmin Pandits are desirable on another ground. Some priests and *math* keepers are jealous of their literary treasures, and do not allow them to be seen by other than orthodox Hindus. When at Puri lately, I had to prove my orthodoxy, by leaving my shoes beyond the outer gate of the house, by drawing water from a well in the compound with my own hands to wash my hands and feet, by prostrating myself before the high-priest, and by sitting on the bare ground of the compound, before I was allowed to enter the Library of the Sankara Math at Puri. The priest allows none to see the library who does not speak Sanskrit. At such places poor Brahmins will find readier favour than high paid Government officials, or men of wealth and position. I would have suggested two pandits, but the Government grant will not cover the expense of more than one.

"Rev. Mr. Long will not object to go out occasionally for the purpose of examining native libraries, and I am willing to devote a portion of my leisure to it, if required. By the new rules lately passed by Government, the Wards' Institution will be in a manner closed for three weeks during the Dusserah, for a month in mid-winter, and for three weeks or a month in May, and, on such occasions, it would be a source of satisfaction to me to proceed to the interior and examine old MSS.

"It is not necessary now to consider the details of working out the scheme, but as the Government letter contains a blank form according to which the catalogues are to be printed, I deem it necessary to observe that to make the returns really useful, it is desirable to add to the form two more columns, one to contain the salutation in verse (after the usual *Ganesaya namah* which should be omitted) and the first line, and the other the last line and the colophon of every MS. Without these, the difficulty arising from the fanciful character of the names of Sanskrit books, which has been so pointedly noticed by Mr. Stokes, cannot be obviated. At first sight, it may appear that the 4th column, giving the "subject matter and name of author," would suffice to remove it, but in many cases such information will prove unavailing. For instance, the character of portions of the Sañhitás or the Bráhmaṇas of the four Vedas, cannot easily be so tabulated as to give the most distant idea of what they really are. I once got four MSS., named "Bráhmaṇas," and unmistakeably bearing the character of brahmaṇa compositions, which the *Pandita*, a reciter of the Sáma Veda, assured me were portions of the Sáma Veda, but which, on examination, proved to be chapters of the White Yajur Veda. Unfortunately the discovery was not made until after I had noticed the works in my *Introduction to the Chhándogya Upanishad* as portions of the Sáma Veda, when Dr. Weber found, from the initial lines published by me, that they corresponded with portions of a work edited by him.*

* As a remarkable instance in point I may note that in a Catalogue of Vedic MSS. in the Library of the Sanskrit College at Benares, published in the last No. of the *Pandit*, I find a MS. (No. 1) described as *Yajur Veda Sañhitá* without any information as to whether it is one of the two known Sañhitás of the Yajus, the Taittiríya of the Black Yajus, or the Vájasaneyi of the White Yajus, or a new work. A *Rig-bráhmaṇa* also, in the same way, occurs in it as distinct from the *Āitareya* and the *Kaughitaki*, though no other Bráhmaṇa of the *Rig* is known to be extant. Initial lines in such cases would afford great help to scholars.

"Again several works are known by one common name, such as *Muktávali*, *Ratnávali*, &c., and as the names of their authors are not often known, or not given in the MSS., they cannot but be mistaken. Synonyms too are in common use to indicate the same work; thus the *Venisañhára* of Bhaṭṭanáráyana is in the North West often called *Venisañvarangm*, and the well known *Chandi* of Bengal is, in Kashmir, and in some parts of the North West, called *Durgápát* or *Durgá*. In such cases, the initial line can be our only guide.

"Should the Committee agree with me as to the importance of having the two additional columns above suggested, it would be necessary, for the sake of uniformity, to bring them to the notice of Government, in order that they may be sanctioned, and the Governments of Madras, Bombay, &c. may be apprised of the same.

"With regard to copyists, it would be more economical to employ section-writers at 4 Rs. the thousand slokas of 32,000 letters, than paying them by the month. Recently I had occasion to employ a man at 15 Rs. a month to transliterate a MS. from Uria into Nágari, and he took 2½ months = Rs. 37-8 to finish the work. Had I employed him at the usual rate of Rs. 4 the thousand slokas, he could not have got more than 10 Rs. for the job. The quality of the work would have been in either case very much the same. Of course there should be an exception in the case of the pandit who may be employed to amalgamate the several lists that will be received from time to time, and prepare copies for the press. Such works cannot be well done by section-writers and, therefore, a man on monthly wages should be engaged. He should devote his leisure hours to the copying of MSS."

The following communications were received—

From Mr. A. C. Carlyle, curator of the Riddell Museum at Agra, an account of the reading of an inscription, different from that formerly recorded by the same author.

A letter from the Government of India, Home Department, forwarding a copy of the papers regarding the geological action on the coast of Kattiwar and the Runn of Cutch.

Indian Proverbial Philosophy by F. S. Growse, Esq., M. A., Oxf.

The Librarian reported the receipt of the following manuscripts purchased for the Society by Bábu Rájendralála Mitra during a late tour in

the North West. The collection includes 188 works, no less than 108 of which relate to or are portions of the Vedas. A great many of them are no doubt *paddhatis* or manuals for the performance of ceremonies, but they are therefore not the less useful, inasmuch as those ceremonies have now become obsolete, and a knowledge of those rituals is necessary for a correct understanding of the Vedas. Next to the Vedas the Smritis are the best represented in the collection, there being 21 MSS. on the subject. Then of the Vedanta there are 12 MSS. ; of the Nyāya 7 ; of the Mimānsā 8 ; of Grammar 5 ; of the Tantras 9 ; of Poetry 10 ; of Astronomy 4 ; and of the Purāṇas 3. Most of the MSS. are new to the Library, and the few that are duplicates are desirable on account of their age, accuracy or completeness. Several of these have been read by generations of Panditas, and have had the benefit of their corrections.

संख्या: यज्ञनामानि । यज्ञकारनामानि शास्त्रनामानि । वाच्चरभेदः पदमन्त्राः				
१२१८	ज्यग्मायविवरकम्	जयतोर्यमित्यः	वैदिकः	मा० ०२
१२१९	प्रसाक्षण्डवटोका	अपतोर्यमित्यः	वैदिकः	मा० ४८
१२२०	सामप्रयोगः वक्षितः	.. .. ..	वैदिकः	मा० १०
१२२१	मिताचरा दृष्टदारकाम्याद्याः नित्यानन्दा चममुनिः वैदिक जा०	८०		
	वाचरभेद पदमन्त्र ६ पदपरि ११			
	पदमन्त्र ५८ पदपरि १० पदमन्त्र च न उल्लिः			
१२२२	धर्माप्रकाश्यमन्त्रप्रयोगः भद्रमहारः	सार्वाः	मा० १४०	
	१२२३ पदोपरि १३६ पदं नालिः			
	१२२४ पदोपरि ५ पदमन्त्र च न उल्लिः			
	१२२५ पदोपरि १ पदं नालिः			
१२२६	प्रपूर्वारचन्द्रः	तान्त्रिक	मा० १०६	
१२२७	पितृपितृप्रयोगः	चन्द्रमूरुदभूः	सार्वाः	मा० ११
	उत्तरचन्द्रमूरुदीकः			
१२२८	मुकुर्माला	रवुनाथः	ज्योतिषी	मा० ४९
१२२९	मन्त्रमालवते	गोकुकरः	तान्त्रिक	मा० ४४
१२३०	दग्धवक्षाद्यः	भाष्मरक्षिः	शास्त्रः	मा० १११
	१०० उपरे ० पदाभावः			
	भौषक्षितः			
१२३१	वेदरेत्वारचन्द्रमालम्	शास्त्रवाचार्यः	वैदिकः	मा० १५

सहस्राः । प्रव्यग्नामानि । प्रव्यकारानामानि । आस्मानामानि । अव्यरमेदः पवसङ्गस्ता			
१२४८ स्तुत्याद्वयम्	वृष्ट्याद्वयनः वादक,,	ना० १८	
पोष्टश्वप्तोभरं			
एकपत्रं स्वित्तं			
श्रेष्ठस्तित्तम्			
१२४९ स्तुत्याद्विषयतम्-			
स्थापनपद्धतिः	दिवाकरं वैदिक,,	ना० १७	
१२५१ स्थास्त्रोपाकप्रयोगः	कमस्ताकरभट्टः धर्मशास्त्रं	ना० ११	
१२५२ आपस्तम्बोद्दृष्ट्यूर्ध्वमास- ..	.. ..	
प्रथमः	वैदिक,,	ना० ४८	
१२५३ वद्वानुष्ठानपद्धतिः	नारायणभट्टः वैदिक,,	ना० ४६	
१२५४ आपस्तम्बीयज्ञातकर्त्त्वं	वेष्टा भट्टः वैदिक,,	ना० ११	
१२५५ भंस्तारकोसुभे प्रवृत्त-			
ज्ञनिकपणम्	चन्द्रनदंवः वैदिक,,	ना० १०	
१२५६ आनिश्वारे वासुद्वानिप्रयोगः दिनकरभट्टः खार्चः		ना० १८	
१२५७ तर्कप्रकाशः			
इष विषितः	नैथायिकः ना० ५१		
१२५८ प्रद्योगसन्त्वयस्तित्तप्रकरणम्	वैदिक,,	ना० ५०	
१२५९ अस्त्रभंदटीका			
४ पत्रं गालि । ८ पत्रं नालि शोकस्याकरायः वैदिक,,		ना० १२	
१२६० स्वायासपद्धतिः व्यवस्थिता खार्च,,		ना० ४४	
१२६१ स्वायमिहास्तमस्त्रोदीपिका	शोकप्तः व्याप,,	ना० ५८	
१२६२ आयुष्कामेष्टिः	वैदिक,,	ना० ०	
१२६३ वैराग्यशतकं विषितम्	भर्त्तुर्तिः काच,,	ना० १०	
१२६४ गयगानं			
४० । ४१ पत्रं च गालि	वेद,,	ना० ५९	
१२६५ पावसाम् वेद,,		ना० ४६	
१२६६ विवतान्वद्वूर्ध्वमासः	विदः तन्त्र,,	ना० ४१	
१२६७ चारुस्तवस्त्रकोमुदो	वाचस्पतिविदः चारुस्त्र,,	ना० ०६	
१२६८ तत्त्वविद्यामौली			
प्रत्यवस्थः । ८ । १० पत्रामावः वद्वेदः	व्याप्त्यास,, ना० ४८		
१२६९ दद्वापूर्ववायम्	वाचिकदेवः वैदिक,, ना० ८६		
१२७० वद्वापूर्ववारीरकं			
चन्द्रवार्षकादिकाठोकादितः			
दामनीर्वः दी			
१८ रत्नवामावः	वर्षजः सूक्त । वेदान्तिकः ना० ०११		

सुक्षमा। अन्वनामानि। अन्वकाराकामानि। शास्त्रानामानि। अवरभेदः पदसंक्षा		
१२९१ विष्णुभक्तिकल्पसुक्ता	काव्य,, ना० १०	
१२९२ दद्रविधानपद्धतिः	काशीहीनितः तान्त्रिक,, ना० १०१	
१२९३ कविराजकौतुकं	कविराजगिरिः शार्त,, ना० २०८	
१२९४ नुष्टिरिरामलिंगोका	रामलक्ष्मभद्राचार्य	
	कवितीर्णी न्यायशास्त्र,, ना० ११२	
१२९५ अनुमानकाण्डालोकः	न्यायदेवमित्रः न्यायशास्त्र,, ना० ४२६	
१२९६ प्रायशित्तमुक्तावली	वैज्ञानिकः धर्मशास्त्र,, ना० ४२६	
१२९७ आपसम्प्रायशित्तम्	आपसम्प्रायः वैदिक,, ना० ११	
१२९८ आपसम्प्रायतत्तुम्	आपसम्प्रायः वैदिक,, ना० १८	
१२९९ शिवभक्तिसुधार्षिदः	काशीवाचः पौराणिक,, ना० १५	
१३०० लात्यरकावली	रामचन्द्रभृष्टः धर्मशास्त्र ना० ८५	
१३०१ सोमप्रयोगः अग्निहोत्रप्रयोगः वैदिक,, ना० ११८	
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१३०२ वैधायनसूत्रे आधानसोम... प्रकरणम्	वैदिक,, ना० ५४
१३०३ नदावते आचाराकपदार्थः		वैदिक,, ना० १२६
१३०४ भावतवदस्थितिः	वौस्तकम्	पौराणिक,, ना० ११
१३०५ नःदःकल्पम्		धर्मशास्त्रम् ना० ४
१३०६ विवाहादिकसाक्षा प्रयोगः	वैदिक,, ना० ५१
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१३०७ दिव्यक्षेत्रोयान्तेष्टिप्रयोगः	केशवभृष्टः	वैदिक,, ना० १८
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१३०९ चतुर्थप्रकापर्यन्तम्		
१३१० देवापिनिष्ठालिंगोका	वैदिक,, ना० १५
१३१० भीमारामकुरुत्तम्	रघुवीरः	भीमाराम,, ना० ५५
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	पद्मदर्शपर्व चर्द्दलिति	
१३११ सोमप्रयोगः आपसम्प्रयोगः	वैदिक,, ना० ११४
१३१२ कुवलयानम्:		
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१३१४ लेन्द्रेष्वाक्षोक्ता		
	१० व पद्म वालि	वैदिक,, ना० १४
	शावाकृतः	

सहस्रः । पञ्चनामानि । पञ्चकारानामानि । आसनामानि । आसरभेदः पञ्चसहस्रा
१२८५ आक्षिंशारः

१२ पञ्चापरि ४ पञ्चालि न सन्ति

१०१ पञ्चापरि १ पञ्चनालि दिनकरः स्नानौ,, ना० ५०८

१२८६ वैधायनीयमहाप्रियोगः

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१२८७ वाशिष्ठपददोपिका आह्यारणः वैदिक,, ना० ११९

१२८८ ओचखूचम् वैदिक,, ना० ११

१२८९ चातुर्मास्यपद्धतिः चनिरहः वैदिक,, ना० ५१

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१२९३ मट्टपरिशिष्टपद्धतिः कामदेवदीचितः वैदिक,, ना० ८

१२९४ व्यवहारतत्त्वः

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१२९५ ददृशात्प्रयोगः विष्णुगदनामा वैदिक,, ना० ६८

१२९६ सर्वदेवप्रतिष्ठा

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१२९७ विभाष्यरत्ने प्राति-

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१२९८ सुधुवार्तिकठोका

(विदिता) मीमांसा ना० ११

१२९९ वदविधिः

वैदिक,, ..

१३०० मिहान्तिहांसनवाचा

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१३०२ मिहान्तिहांसनवाचा:

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१३०३ प्रथागच्छामदिः

१८ पञ्चापरिक्षितः

तदुपरि ११ पञ्चापि ।

तदुपरि १२ पञ्चापि आस्तरदीचितः स्नानौ,, ना० ११३

सहस्रः । यन्वनामानि । यन्वकारनामानि । वासनामानि । अस्तरमेदः पवसक			
१२०४ वामकाचरतम्			
मन्त्रकोषः	महादेवः	तत्त्वः	ना० १०
१२०५ नहोदयः	कालोदासः	कावः	ना० ११
१२०६ सामवेदोदय वेयवाचं			
१४८ पचोपरि १ पचं नालि		वेदः	ना० २४८
१२०७ दीक्षाविधिः		वैदिकः	ना० १०
१२०८ व्रात्यापम्			
(अपवर्णितम्		वेदः	ना० ५०
१२०९ व्रात्यापम्			
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१२११ उद्दापाणः			
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१२१२ चानिकः	भेदादेवितः	भेदवाक्यं ना०	१५
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१२१५ चातुर्मासाक्षत्यवम्	योगायतः	वैदिकः	ना० १४
१२१६ चारामोऽवर्गप्रयातः		वैदिकः	ना० ८
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१२१९ वेष्वायनसूत्रम्			
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१२२१ अष्टावाक्योऽव्यातः	कमलाकरभृः	वैदिकः	ना० १०
१२२२ द्वादशमवाचाकाम्	पूर्णोन्नदिवितः	वेदात्मः	ना० १४
१२२३ कोकिलक्षणिः	कोकिल चरितः	कृतिः	नो० १०
१२२४ दर्शनोऽमालकाक्षः		वैदिकः	ना० ०८
१२२५ चातुर्मासवेषाक्षकारिका	वेषाक्षः	वैदिकः	ना० १०
१२२६ वेषाक्षकारिका	वेषाक्षः	वैदिकः	ना० ११

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१२४०	जैज्ञाम्यसिद्धिचिका	ज्ञानोन्ममित्रः वेदान्तः	मा०	१८
१२४१	साडाहरनस्कामुदीडीका	वाचस्पतिः सारुकः	मा०	१९
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The following papers were read—

I. *Notes on an Asian inscription*, by E. C. Bayley. Tracings of the inscription were laid on the table. They were taken from a copper plate found by Capt. Stubbs, at Sue Vihár, near Bháwalpúr and forwarded to Mr. Bayley. Application for the loan of the plate will be made in order that a fac-simile of it may be published in the Journal together with Mr. Bayley's reading. A most interesting point connected with this inscription is that the names of the Macedonian months were in use in some parts of India.

II. *Notes on Western China*; by T. T. COOPER, Esq.

If we include in Western China that part of Tibet, lying to the east of the Kinchar Kiang, and extending to the banks of the Tar-tow-

ho, then with the golden sands of the Yarlang and Kinchar rivers, the silver, tin and copper mines of Western Yunnán, and the mineral wealth of Szchuan, we speak probably of one of the richest countries in the world, while the prolific soil of these two provinces proclaim Western China to be the garden of Central Asia.

The veil of mystery which has for so long surrounded this part of China (unlifted as yet save by the individual efforts of the good *Abbé Huc*), seems with the advance of European nations in their march of civilization about to be torn aside, to give light to the millions of Central Asia. When the fierce Mongol roaming in quest of plunder shall halt, commanded by the powerful voice of Western knowledge and science, when the superstitious teachings of the crafty Láma shall give place to the voice of God, as spoken to man through the great Teacher Christ, then the fruits of the country shall give forth their increase, and the people be freed from the yoke of tyranny.

As in speaking of "countries" of the world, it is generally understood that we mean parts of the earth's surface inhabited by distinct races or peoples, and draw the boundaries generally as near as possible round the space inhabited by each race or people, being guided in doing so by the distance to which their language and customs extend. In defining the Western boundaries of the great province of Szchuan we must commence about Lat. 30° 20' N. and Long. 102° 5' E. Travelling down the west bank of the Tar-tow-ho, and continuing almost due south until we strike the Yangtzu, about 80 miles west of the Min river, all the country to the west of this, following the bend of the Kinchar Kiang to where it turns north,—and crossing the Lantsan Kiang, Now-Kiang and Irrawadi rivers in a straight line to the borders of Assam, and north of this point to the borders of Tibet which commence about Lat. 27° 45' N., and thence in a N. E. direction back to the Tar-tow-ho,—is inhabited by tribes tributary to China and Burmah. Amongst the former are:—

The *Lo-Los* inhabit a strip of country to the west of the Tar-tow-ho, as far as the borders of Tibet; and then to the south of that as far as the Yangtzu the country is occupied by a tribe of Tibetans, a name indiscriminately given by Chinese in the west to all the self-governing tribes beyond the borders; then from the boundary of Tibet, commencing at

Artenze, situated about Lat. $27^{\circ} 50' N.$ and Long. $96^{\circ} 30' E.$, and following the banks of the Lan-tsan-Kiang as far south as Lat. $26^{\circ} 40' N.$ are the following tribes : Mosos, Leisus, Mooquors, Yatzus, Chudzus and Trefans. Then between the same latitudes the country between the Lan-tsan-Kiang and Now-Kiang rivers is inhabited by the wild and powerful tribe of Ludzus who are the terror of all the tribes above enumerated. Beyond the Now-Kiang to the west as far as the borders of Assam, the tribes are mostly tributary to the kingdom of Burmah.

Of the three great highways leading from the eastern seaboard to Western China, *viz.* from Canton to Yunnán, through the provinces of Kwang-tung and Kwangse : from Shanghai to Szechuan *via* the Yangtzu, through the provinces of Kiang-tzu, Ngan-hoei and Hoopa ; and from Peking to Chentu, the capital of Szechuan through the provinces of Petcheli-chau-si and Chen-si, that of the Yangtzu, with the advantage of water-carriage, is certainly the most important, leading from the east.

We all know how that by the magnificent steamers, at present running between Shanghai and Hankow, a traveller is hurried away through the two great provinces Kiangtzu and Ngan-hoei, and in the space of three days landed in Hankow, having without a single effort beyond enjoying to his utmost the comfort and hospitality on board these splendid vessels, travelled some 600 miles ; but few know what it is to exchange these floating palaces for the native crafts used as a means of conveyance between Hankow and the upper waters of the Yangtzu. There may be said to be two distinct classes of conveyances between Hankow and Szechuan—the one used exclusively for passengers and the other for cargo. Under the first class the Mandarin Junk, a large unwieldy craft of nearly one hundred tons burthen, highly ornamented and gilded inside, and used almost exclusively by Mandarins travelling up and down the river with their families, may be said to take first rank as to comfort ; and next to it, a boat about 50 tons burthen called Passenger Junk ; and, lastly, the little boat generally a long canoe-shaped despatch craft, some 40 feet in length, covered, with bamboo mats, and propelled by two men in the bow and one in the stern. These boats, built of wood which grows in the district of Wa Chien are of such toughness as renders them almost indestructible, and are by far the quickest means of conveyance, but at

the same time most inconvenient for creeping along the rocky banks of the river ; they are continually thumping on sunken rocks in such a manner that at a very early period a voyage to Szechuan is calculated to destroy the nerves of the most courageous traveller.

Amongst the cargo carrying craft, that known as the Szechuan Junk is conspicuous from its great size and comfortable little cabin near the stern, in which the adventurous Szechuan merchant, during the three months' voyage from Hankow to Chung Ching, spends his days, inhaling the energy-destroying fumes of opium. The next most conspicuous are the charcoal and straw-boats which are larger than the so-called Szechuan Janks, are loosely put together and loaded to a depth that would deter any one, but a careless indolent Chinaman, from travelling in them ; these are sent down to Hankow with charcoal, fruit, and a peculiar kind of straw, used in the manufacture of spill paper, and on arrival are broken up and sold for fire-wood, the expense of taking up so large a boat against the current amounting to more than the price of a new one in Szechuan.

Having described the means of conveyance on this great artery of commerce, I proceed to describe the road itself as far as Chentu, the capital of Szechuan. Embarking at Hankow, the traveller suddenly finds himself (after passing the city of Haniang on the left bank) ascending the swift current of the Han, and after a day's tedious journey up this river enters the chain of lakes through which he follows a westerly course for 8 or 10 days, as far as Shas-su on the left bank of the Yangtzen ; having, by taking the lake route, cut off the bend of the great river above Hankow. Embarking at Shas-su on board a river boat, he ascends the broad and swift current as far as Ichang on the left bank, passing which a few miles above he enters the Ichang Gorge, the first of the celebrated Yangtzen gorges, and leaves behind the plains of Hoopeh which here give place to hills, running generally N. E. and S. W., increasing in height and splendour, until they attain a climax in the snowy mountains of Tibet. Continuing up this gorge some 20 miles passing ever and anon deeply laden Szechuan Janks, rowed by boatmen, whose wild but cheerful song runs in a hundred echoes along the precipitous sides of the gorge, he comes to the first rapid, and having been safely towed up this, he may be said to have undergone his initiation in travelling the upper Yangtzu. Passing on

from this, a few days' journey brings him to Pah-tung, the last town in Hoopeh, famous for its potatoes; and here for the first time he sees coal of an inferior quality, deficient in bitumen and very slaty. Passing on from this through the Lukan gorge in a few days he reaches Quifoo, the principal customs station in the province of Szechuan and meets perhaps his first annoyance in the insolence and extortion of the custom house satellites whom he is obliged to fee pretty heavily before he can get away. This city, from its importance, as a customs station, and the monopoly of a large salt trade takes foremost rank amongst the cities on the Yangtzu between Hankow and Chung Ching, and from the good coal procured in great quantities in its neighbourhood deserves the attention of Western nations as a Port of call for steamers.

Having got rid of the customs officials here, the traveller continues on through the Mitan gorge and then beyond, for the first time, sees in the river banks a specimen of the beauty and fertility of the garden-like Szechuan. The banks where they slope down to the water are covered with rich crops of sugar and higher up in the back ground snug little whitewashed cottage-like houses, nestled among the hills, throw round the country a home-like air; and in early spring the country inland is white with the poppy flower. Amidst country like this, varied occasionally by the solemn grandeur of gorges, the traveller in about 40 days, after leaving Hankow, arrives at Chung Ching, the great trade emporium of Western China.

To all lovers of travel, the journey up the Yangtzu to Chung Ching affords a pleasant field for observation and excitement; its dangerous rapids, whirls and eddies, and magnificent awe-inspiring gorges, lend to it that charm which enchantsthe enthusiastic traveller, and serves to enliven what would otherwise be a tedious voyage. And then to the geologist, the field for observation is most extensive, especially along the gorges, where the perpendicular rocks, forming their sides, show to perfection the geological formation of the country; in many of the gorges will be seen a reddish grey sandstone with its exposed surface glazed, as though it had been polished with black lead. This sandstone attracted the special attention of Captain Blakiston, the first explorer of the Yangtzu, and he speaks of it as one of the greatest geological curiosities he met with during his expedition, and

I have certainly never in any part of the world seen the same feature in sandstone, while as far as I was able to observe, the stratification is very varied, consisting of Tufas, red and gray sandstones, granite, limestone, shale and many others, the name of which, being uncommon, I am ignorant of; red sandstone and a kind of loose flaky magnesian limestone appearing the most common; the latter in many places, however, I hesitate to call limestone, though it is more like that formation than any other I know of.

On arriving at Chung Ching, the traveller may know at once by the number of junks, bustling activity of the people and general well-to-do look of the city,—to say nothing of the never ending stream of coolies carrying merchandise,—that he has arrived at a great trading mart. Raw cotton from the lower Yangtzu is continually being discharged from the junks lying along the river, while foreign piece goods meet his eye at almost every turn, nearly every other shop displaying these goods for sale. Raw cotton and cotton piece-goods form the principal imports, but foreign glass and crockery-ware, judging from the number of shops engaged in the sale of these articles, appear to find a large market in Chung Ching, while sugar, hemp, tobacco, silk and native medicines (this last article in incredible quantities) are the principal exports.

Chung Ching besides being the great Western mart of trade, is financially the city of greatest importance in the west of China. Here the pay of the Frontier army is regulated, as also the pay of the Government staff of Szechuan. The customs dues of the whole province find their way here, and so great is the fame of Chung Ching wealth in China, that the specie in common use there is at a great premium, and the merchants have their agents north, south, east and west throughout the empire. Such is the famous Chung Ching, the Liverpool of Chinese trade, and it is to be hoped that Western commerce and energy will soon find their way to her, unfettered by the extortion and exclusive pride of worthless and ignorant mandarins.

Leaving Chung Ching and continuing up river, a journey of 7 days, brings the traveller to Swifog (Souchowfoo), a large city, situated at the mouth of the Min river, of considerable importance as a tribute station to which many of the tribes, immediately to the west of the Min annually repair with tribute; it is also the last city

of consequence on the upper Yangtzu which ceases to be navigable about 160 miles above this point. Entering the Min at this city, and following its broad waters for 5 days, the famous city of Kiating is reached, the centre of the so-called vegetable wax and silk country. This city, famous throughout China, not so much for its great trade, (as it is really little more than a transit station), but as the resort of pilgrims to the great Omeehau, the centre of Bhuddism in China, two days' journey from Kiating to the west, the fame of its temples and the blessing givings of gods, draws thousands of pilgrims from all parts of the empire, Tibet and even Burma. The Chinese say that this large peaked mountain ever shows on its sides the four seasons of the year: spring, summer, autumn and winter, and this is not improbable, as the mountain is clearly visible at Kiating and appears to be of enormous height.

From this city the river branches off to the east and north-west, that to the west taking the name of Tar-tow-ho, and that to the east King-Kiang, following which for 5 days Chentu, the great capital, situated in the fertile plains of Szechuan, is reached. This city containing on a rough estimate about 800,000 inhabitants is the Paris of China, the numbers of civil and military Mandarins located here, are astonishing, and give to the place quite an aristocratic air; it, however, has little trade, save in articles of luxury, such as embroidered silks, (from the district of Kiateng), musk from Tibet, jade from Yunnan and a local supply of foreign articles from Chung Ching. At this capital, the route from Pekin joins the grand route from Szechuan to Lassa, the jurisdiction of the viceroy extending to Bathang and nominally to the Tibetan capital, Lassa.

I have described Chung Ching, the great central trade mart of Western China, and the route from this to the capital of Szechuan which runs through the richest part of the province, and in doing so, I should have mentioned that at Ludzow, a large city some 5 days' journey above Chung Ching, there is an enormous trade in Salt and Lead, the former finding a market at Chung Ching principally, and the latter at Kiateng; the cities of Wootung Chow-che-wachin and Kiateng on the Min and Kung-yar-chen, on the Tar-tow-ho, about 50 miles above the latter city forming the outlets by which the silk, wax, tobacco and sugar of this rich part of the province find their way to Chung Ching.

Previous to the Mahomedan war which broke out in Yunnán some 14 years since, an enormous trade was carried on between Burmah and Taili, the present Mahomedan capital of that province. Starting from Bhamó on the Irrawadi river, hundreds of caravans consisting of thousands of mules laden with raw cotton and cotton piece-goods annually found their way to Taili, but until within the last 3 years that trade has been entirely destroyed; since then, however, a fair trade has sprung up, receiving but a slight check in the beginning of the year 1868, owing to a civil war which broke out amongst the wild tribes on the borders inhabiting the hill country which forms the boundary between Yunnán and Burmah. This route in influencing the trade of Western China will soon become a serious rival to the trade at present existing between the eastern sea-ports and Szechuan, and can only be successfully combated by the opening of Chung Ching as a port to which steamers may run; but, in the event of steamers plying to Chung Ching, Burmah can never hope to influence the trade of Szechuan. Considering the great wealth of Szechuan, it is but natural to suppose that the appearance of the country and people, would indicate in some measure its prosperity, but beyond the luxuriant crops always to be seen throughout the year, such is far from being the case; even in the most thriving districts of Chung-ching, and Chentu, every city shows dilapidated and ruined walls. Their public buildings, such as temples, theatres, massive gateways and yamuns, originally built in magnificent architectural style and ornamented in a manner indicating the most lavish expenditure, all show decay and neglect; even the costly and massive stone archways, built over high-roads by virtuous widows as a memorial of their departed husbands' goodness, are in decay and suffering from neglect, as though they, like every other thing of beauty in China, were works of another people. As a rule, the inhabitants appear little better off in a worldly point of view, than those of other provinces, and like the people of the Eastern lands, they are but a sad reflection of an utterly corrupt government. Bribery and falsehood have usurped the seat of truth and justice among them, a perfection of subtlety in the highest aim of their education and reason, a monstrous self-pride and selfishness have long since destroyed that sympathetic feeling which binds man to his fellow, and strengthens a people against the injustices of a

tyrannical government. The frightful extortion and absolute power of the mandarins, and their satellites, have broken their spirit so completely, that they have become utterly indifferent to the fate of their country. And lastly the curse of opium and religious superstition has brought them to a condition, the contemplation of which is truly lamentable. So conspicuous is the general aspect of ruin throughout the province, that I felt it at all times sad to realize the fact, that I was travelling amongst a people, the works of whose forefathers only stand to mark the decay of their progeny, and the gradual decline of the great Chinese Empire. China of to-day is but the remnant of a past age. The cause of internal decay hangs heavy over her; she is but the expiring embers of a once bright and beautiful fire. Shall the spark of truth and knowledge that is required to rekindle her into brightness come from the West? Let the great nations that at present busy themselves so much about her welfare, consider this question, for of a truth—the saving of China *from herself*—is no easy matter to be accomplished!

The cultivation of opium in China has of late become such a serious question in connection with the demand for the Indian drug, that a few remarks on this subject may not be considered out of place here.

Hue in his work on China makes little or no reference to the cultivation of opium, and a Reverend Father who resided in Szechuan for thirty years assured me, that when he first visited that province, and for many years after, the growth of opium was unknown, and until of late years, Szechuan has depended on Yunnan and India for its supply. The Mahomedan war cut off supplies from Yunnan, which opium is more highly esteemed than either the foreign drug, or that produced in Szechuan, and when this supply failed about twelve years since, it caused a greater demand for the foreign drug, and consequently an increased price, which soon had the effect of increasing the cultivation of the drug in Szechuan, until at this moment it forms with sugar, rice and tobacco, the principal cultivation of the province.

The present extensive cultivation of the drug in Szechuan, and the revival of cultivation in Yunnan during the last four or five years, may probably account for the sudden decrease in demand for the Indian drug in Western China.

His Excellency, the Nepalese ambassador brought with him to Chentu several hundred boxes of Indian opium, which he was unable to dispose of, save a few boxes bought by Chung Ching merchants for shipment to Hankow, and I believe that I was rightly informed that the people dislike the Indian drug on account of its great strength. Chinese Mandarins, coming from Lassa, invariably bring opium with them into China, purchasing it of the Nepalese merchants coming from Khatmandoo, and disposing of it to Chung Ching merchants who, I presume, find a market for it east of Szechuan. *

Joining at Chentu, the great highway to Tibet, and travelling west three days through the plain of Szechuan, Yarchu city is reached; the soil of the plain is most prolific, yielding annually two crops of sugar and rice. Beyond Yarchu for two or three days, the road leads through a beautiful hilly country, very rich in iron and copper, while from this point crossing the Yangtze range of mountains to the Tar-tow-ho, the country gradually becomes a wild and sterile chaos of large peaked mountains, yielding to the inhabitants of this wretched country scanty crops of potatoes and Indian corn, upon which they principally subsist. Crossing the Tar-tow-ho at Luolinchow by means of a chain suspension bridge, 340 yards span, built about 80 years since, three days travelling in a north west direction along frightful precipices, brings the traveller to Tontseanloo, the border town of Tibet.—Here, as for the past three days, he finds himself amongst a different people, while the climate has changed to excessive cold, the surrounding hills being covered with snow for eight months during the year.

Up to this point, chairs are used as a means of conveyance, but before the traveller can prosecute his journey into Tibet, he must purchase mules, tents, watch-dogs, and a ten days' supply of food for himself and cattle. Thus equipped, he leaves Tontseanloo and in two days crosses the Jello range of mountains; but how different to the peaked masses of limestone in the neighbourhood of Tar-tow-ho are these mountains! For the first day the country is nothing but huge granite boulders as far as the eye can reach, but next day, on arriving at the summit of the range, every thing is changed before him, there is a sea of high grassy ranges without a vestige of a tree,—large herds of yaks and sheep dot the sides of the mountains in black and white

patches,—the wild, still grandeur of such a scene is an ample reward for the heavy and toilsome ascent. Continuing on through these ranges occasionally descending into valleys covered with yellow and white pine forests, in eight days the Tibetan town of Lithang is reached, situated on a very high plateau, so high that the traveller finds breathing very difficult, and after resting a day to recruit his larder with butter and flour, he is glad to leave Lithang with its gilded monasteries, containing about 3500 Lamas; and for the next ten days he travels through a fearful country of snowy mountains, the lower ranges of a bare limestone-like formation, the higher peaks covered with perpetual snow, towering into the heavens to an enormous height. During these fatiguing ten days, he crosses the Sambar and Taso snowy mountains and at the western foot of the latter, in a beautiful fertile valley, reaches Bathang, a Tibetan town, like Lithang famous for its Lama monasteries.

Bathang is the last town of importance in the eastern kingdom of Tibet which is nominally subject to China; there is a Chinese mandarin here who, in concert with the Lamas, guards the borders most zealously against the intrusions of outsiders. Thus far from Chentu the Szechuan Capital, we have travelled the grand highway leading from China to Lassa the capital of Tibet, and it is by this route, that some three or four million pounds of tea are annually sent to Lassa from the district of Yarchu. The tea of a very coarse description is carried on pack saddles by yaks and mules to Lassa, a journey occupying about four months.

From Bathang there is another route which leads to Assam, untravelled as yet by Europeans.—

Before the Mahomedan war cast its gloom over the fertile province of Yunnán, and while the hundreds of trading caravans annually travelled between Bhamo on the Irrawadi and Talisoo, the present Mahomedan capital of that province, they created a trade, the fame whereof has lived till this day, and the revival of which should form, if not the first, at least the second most important question occupying the commercial mind of England to-day. This question has already received so much attention, that I need not observe that, while it will confer immense benefit on the British possessions in Burma, if re-opened, it cannot be of immediate importance to our Indian possessions, and deep in this conviction I have

been engaged for the last year in seeking a route by which India and Assam could communicate more directly with China. That such a route does exist, I have ascertained, namely, from Bathang to Zy-yu, a Tibetan town at the foot of the Himalayas on the east, thence crossing the mountains to Sudyu on the Brahmaputra, a distance altogether of 180 miles, or thereabouts. This route leaving Bathang leads south-west crossing the Kinchar Kiang, Lantsan-kiang and Now-kiang rivers, to the Tibetan monastery of Bonga, thence north-west to the Tibetan village of Song-nga, Kui-dzong in the south Pomi country, and thence west a few days to Zy-yu. (The Pomi country alluded to is part of a province of Tibet, subject to the government of Lassa, the northern half being only religiously dependent on the Grand Láma). The road is travelled by mules carrying cargo, and occupies some twenty days between Zy-yu and Bathang, but at this moment from the warlike nature of the Mishmi tribes, and the fear entertained by the Lámas and people of Tibet for foreigners, it presents many difficulties to peaceful intercourse, while the severe climate will probably confine communication to eight months during the year. Of this, however, I am not certain, nor am I certain that this route has not been travelled by the Catholic Missionaries in earlier years.

I have spoken of the river Yang-tzu as the great trade artery of China, and will conclude these notes with a few remarks on its great annual rise and fall.

The original cause of the summer floods which annually deluge the plain of Hoopeh, Nganhwei and Kiang-tzu, forming the valley of the Lower Yang-tzu, takes rank amongst the first scientific problems yet to be solved by western energy and learning.

That the snows and rains of the country drained by the Yar-loong-kiang and Kin-char-kiang, influence the rise of the Yang-tzu, is without doubt, but that they are the sole cause of the floods, appears doubtful.

While travelling from Wei-si in Yunnán towards Chung-ching through Bathang, Tatseanloo and the Tar-tow-ho country, I everywhere encountered floods and signs of floods, the like of which, so the people told me, had not been known for twenty years. Part of the town of Artenze on the northern border of Yunnán had been washed away, and many parts of the road which I had travelled in May and June had become channels for terrific mountain torrents, and to the east of Tatseanloo

we passed the sites of numerous villages that had been washed away entirely ; yet on striking the Yang-tzu at Swifoo in October, I was astonished to find the river had been three feet below its last year's level, though it was higher for the time of the year than last year. The rains which caused such unusual destruction in the country I have alluded to, commenced in June, and subsided towards the end of July, or beginning of August, so that the waters in the plains, which in November were higher for the time of year, than has been known for a long time, could scarcely have been influenced by the rains of the mountains, which had subsided by the middle of August, and thus I am led to infer that the cause of these floods in the plains is purely local ; perhaps the Tung-ting Lake and the Han River are the great feeders of the lower Yang-tzu.

A long discussion followed the reading of this paper.

Col. Thuillier drew the attention of the meeting to a few of the most interesting points in the account which Mr. Cooper has given of his exploration of Western China. These researches are most valuable not only in a commercial point of view, but also as bearing upon the geography of the country. He (Col. Th.) considered it the duty of every one, who had followed the explorations of former travellers in the same parts of the country, to remind Mr. Cooper of the perilous and dangerous nature of the route which he had selected for his further explorations. However, Mr. Cooper's experience in those districts, was no doubt an extensive one, as clearly shewn by his travels, and he (Col. Th.) desired to express the hope that Mr. Cooper will be able, in spite of all the enormous difficulties, to enlarge in every respect our knowledge of that country.

Col. Th. begged to propose that the special thanks of the meeting be given to Mr. Cooper for his very interesting account of his travels, and also an expression of their best wishes for the success of his further explorations.

Dr. J. Anderson in seconding Col. Thuillier's proposition, wished to ask Mr. Cooper, if he had obtained any information regarding the sources of the Irrawadi. Dr. A. put this question because he had made special inquiries during his stay at Bhamo regarding the upper course of that river, and had been informed that the largest branch runs in a north-easterly direction. Capt. Wilcox saw, from the Patkoi range,

what he believed to be the Irrawadi, and described it as an insignificant stream. Dr. A.'s informant, however, described the eastern branch as a large river, running between high banks, and the western as a smaller one. Dr. A. was inclined to believe that what Wilcox saw was merely this branch, and not the main stream which most probably rises far to the north of Capt. Wilcox's position.

While at Momein Dr. A. also made particular enquiries regarding the size of the Salween, the course of which was indicated by the lofty Saychan range of hills, about 15 to 20 miles from Momein. The information was to the effect that the river was a very small stream. The Camboja, however, was described as a broad and deep river between high and precipitous banks, and the Pekin highway is said to cut it by a chain suspension bridge. The Salween thus not stretching so far to the north, as is usually represented on our maps, it is possible that the large streams, heard of by Mr. Cooper, may have been the eastern branches of the Irrawadi. Mr. Cooper's opinion on this subject, Dr. A. thought, would be very valuable.

Col. Th.'s proposition was favorably responded to by the meeting.

Mr. Cameron made a few observations regarding the people of Eastern Assam: he believed that travelling in those districts is most dangerous, especially in the country of the Mishmi tribes.

Mr. Cooper said that he had no direct observation, or reliable information, as to the upper course and the sources of the Irrawadi, but he himself was of opinion, that its sources lie much further to north, than they are usually indicated on our maps. On a small route map, which he (Mr. Cooper) had lately prepared, he marked the course of the Irrawadi much above the latitude of the Patkoi range towards the North, coming from Eastern Tibet.

Mr. Cooper thanked the meeting for the kind reception and encouragement which he had received, and said that he is ready and prepared to meet any difficulties, and undergo any hardships to do justice to the task, which he had undertaken.

Col. Thuillier considered the discovery of the sources of the Irrawadi and Brâhmaputra as one of the greatest geographical problems of the present time, but thought that Mr. Cooper's object was not exactly the discovery of the sources of rivers, but simply the opening of a direct route from India to Western China. He (Col. Th.) also stated for the information of the meeting that the pandits, trained by the

Trigonometrical Survey are at the present engaged in those parts of Tibet, and he doubted not that they will bring us ultimately a great deal of the information required on those geographical problems.

Dr. Anderson said that he had put the question as one of general interest, to elicit information on the subject; he himself held no opinion one way or another regarding the supposed relation of the Tsampô and the Brahmaputra.

The Hon'ble Mr. Phear referred to the symmetry and the parallel structure of the mountain-ranges in their north-southern extensions, as exhibited on the map, and asked what the average height of these mountains in those districts of Western China was. He thought, that considering the great elevation of the country from which the Irrawadi comes, the river must either pass through a very deep gorge, or be a succession of great falls.

Mr. Cooper thought the elevation of the mountains, through which the Irrawadi flows, to be about 7,000 feet.

Dr. Anderson observed that the average height of the hill-ranges south of Bhamo was 5,000 feet, although some of the peaks were as much as 7,000 feet.

The President, in closing the discussion in which the Hon'ble Mr. Phear, Dr. Anderson, Mr. Cooper, and several other gentlemen took part, observed that the proposition brought forward by Col. Thullier had been already so well responded to by the meeting, that it would be unnecessary to put it in any more formal way from the chair. He (the Pres.) repeated the thanks and the good wishes of the Society, and joined in the general expression of hope that Mr. Cooper's explorations might be followed by that success which his untiring zeal, courage and perseverance in prosecuting his object fully entitled him to expect. Considering the problem which Mr. Cooper had placed before him,—the opening of a direct communication between India and China and Central Asia.—the President thought that the shortest route should be examined before any other were selected.

III.—Contribution towards the knowledge of Indian Arachnoides;
by DR. F. STOLICZEKA, (Abstract).

The author observed that few branches of Zoology had received in India so little attention as the study of the *Arachnoides*. They unfortunately belonged to one of those classes of animals against which

people seem to have a natural horror of feeling, when they come in contact with them. No doubt the dark places which some inhabit and the dangerous bite of others, have brought down this contempt upon the whole class. And still there are few animals more important and useful in the economy of nature, where an adequate balance between all classes of beings must exist, than the Arachnids. They only live upon insects, and destroy a very large number of some, which do much damage and harm to other animal and vegetable life. Indeed, when we look upon their occasionally fantastic forms, there is not much more variety that imagination could invent, than we meet among the *Arachnoidea*; and as regards variations of shade, tasteful distribution and brilliancy of colours, they do not remain much behind the beauties of nature, the birds and butterflies.

It was at first the intention of the author of this paper only to collect materials for a monograph of the Indian SCORPIONIDÆ, because they are better known to most people than the spiders which, being generally harmless, are as a rule passed by unnoticed. The materials for such a monograph, which ought to give a sufficiently perfect account of the group, are, however, only gradually forthcoming, but with the aid of friends, it is to be hoped that the work can soon be brought to a conclusion.

Meanwhile, a large number of other *Arachnoidea* has been collected, and among them some are very interesting forms, new to science; out of these the author had made a selection of species, representing some of the principal divisions, or tribes, of the class. The species are described with all the necessary details, and of all of them the required illustrations will be given. The object of this arrangement is principally to direct attention to the variety of forms, and to aid those who may feel inducement to take an interest in the study of *Arachnoidea*. It hardly needs to be repeated that few other branches of Indian Zoology offer such a large number of interesting novelties to one who wishes to assist in the study and revelation of the animal forms surrounding us.

The species described in the present paper are *Gagrella signata* and *strata*; *Galeodes orientalis*; *Tlyphonus Assamensis*; *Thomisus pugilis*, *Th. elongatus*, *Th. Peelianus*; *Gastrarachna Cannингensis*; *Meta grisea*; *Tetragnatha iridescens*; *Nephila angustata*; *Epeira (Argyopes)*

stellata, Ep. (Arg.) mammillaris; Ep. Brahminica, Ep. hirsutula; Dolomedes longimanus; Hersilia Calcuttensis; Spharus viridanus, Sph. similaris; and Scytodes propinqua.

The reading of Capt. Fryer's "Contribution to Pelagic Mollusca" and Dr. Meredith's "Topographical features of Assam," was postponed. The President announced the new elections and the meeting separated.

LIBRARY.

The following additions have been made to the Library since the last meeting held in April, 1869.

Presentations.

* (Names of donors in capitals.)

Bulletin de la Société de Géographie, January, 1869.—THE GEOGRAPHICAL SOCIETY OF PARIS.

Bijdragen tot de Taal-landen Vekenkunde van Nederlandisch Indie Tweede deel, 2nd en 3rd stuk; Derde Deel, 1st en 2nd stuk.—THE SOCIETY.

Proceedings of the Royal Society, Vol. XVI. No. 108.—THE ROYAL SOCIETY OF LONDON.

Proceedings of the Geographical Society Vol. XIII. No. 1.—THE ROYAL GEOGRAPHICAL SOCIETY OF LONDON.

Rahasya Sandarbha, Vol. V. No. 51.—THE EDITOR.

Das Achtzehnte Kapitel des Wendididät; by Dr. M. Haug.—THE AUTHOR.

Maleisch Leesboek, door H. N. Van der Tunk.—THE AUTHOR.

Discours Prononcé à l' Ouverture du Cours de Cochinchinois; par Abel des Michels.—THE AUTHOR.

Report on the Administration of Mysore 1867-68.—THE GOVERNMENT OF BENGAL.

Ditto on the Administration of the North Western Provinces for 1867-68.—The same.

Annual Report on the Administration of the Province of British Burma for 1867-68.—The same.

Annual Report on the Operations of the Post Office of India for 1867-68.—The same.

Report on the Administration of the Hyderabad assigned district for 1867-68.—The same.

Annual Report on the Administration of the Madras Presidency of 1867-68.—The same.

Report on the Administration of the P^{an}j^{ab} and its Dependencies for 1867-68.—The same.

Report on the Administration of Coorg, for the 1867-68.—The same.

Selections from the Records of Government North Western Provinces 2nd Series Vols. I. No. 3, 4.—THE GOVERNMENT NORTH WESTERN PROVINCES.

Memoirs of the Geological Survey of India, Palaeontologia Indica, Vol. V. 7—10.—THE GOVERNMENT OF INDIA, HOME DEPARTMENT.

Punjab Plants, comprising Botanical and Vernacular names, and uses of the most of the trees, shrubs and herbs of economical value, growing within the Province.—PUBLIC WORKS DEPARTMENT, PUNJAB.

Purchase.

The Vishnu Purana Vol. IV. : by H. H. Wilson.

Calcutta Review for April, 1869.

Comptes Rendus Nos. 1, 2, 3, 4, 5, and 6, 1869.

Journal des Savants, December, 1868 and January, 1869.

The Ibis Vol. V. No. 17.

Revue Linguistique, Tom. 2nd Fas. III.

Revue Archéologique No. 2, 1869.

Revue des Deux Mondes, from to 1st February 15th February, 1869.

Exchange.

The Athenaeum for December, 1868, and January, 1869.

PROCEEDINGS
OF THE
ASIATIC SOCIETY OF BENGAL,
FOR JUNE, 1869.

The Monthly Meeting of the Society was held on Wednesday, the 2nd instant at 9 o'clock P. M.

T. Oldham, Esq., LL. D., President, in the chair.

The minutes of the last meeting were read and confirmed.

The following presentations were announced—

1. From Mr. A. M. Cameron—A copy of a lecture on Persian Poetry and Romantic Poets of Persia.
2. From the Government of India, in the Foreign Department—A copy of a Journey to Kashgar, in 1858, by Capt. Valikhanof, translated by Mr. R. Michell.
3. From Mr. H. von Schlagintweit-Sakünlinski—New data regarding the death of A. von Schlagintweit, (Extract from the reports of the mathematical and physical class of the Bavarian Academy of Science, München, 1869).

Mr. H. von Schlagintweit states that, from information which he received last autumn from a Musalman servant, named Abdullah of Umritsur, he had been able to ascertain much more accurately the date of the death of his unfortunate brother, than it had been possible to do from previous dates. Abdullah writes that Mr. Adolph v. Schlagintweit's camp was attacked by Vali Khán in front of the city of Kashgar, and that the traveller fell in the struggle. Abdullah was thrown in prison, and the next day he observed the new moon of the Muharram. He further states that the day on which he was imprisoned was a Chahár-shambih, or a Wednesday. From

these and some other circumstances Mr. H. von Schlagintweit concludes that his brother Adolph fell in the morning hours of the 26th August, 1857.

4. From M. Cantopher, Esq., two copper coins of Antoninus Pius and Galba, taken out of a small lake in the vicinity of Tournay, in the south of Belgium, and presented to Mr. Cantopher by the Curator of the Archaeological Museum of the Jesuit's College in that city.

On the motion of the President, the thanks of the Society were voted to Mr. Cantopher.

The following gentlemen duly proposed and seconded at the last meeting were balloted for, and elected ordinary members,—

J. Schroeder, Esq.

J. Leupolt, Esq., C. S.

F. W. Rawlin, Esq., B. C. S.

Bábu Udayachanda Datta, Purúlia.

W. C. Bonnerji, Esq.

The following gentlemen are candidates for ballot at the next meeting.

Lient. J. C. Ross, R. E., proposed by Mr. A. Cadell, C. S., seconded by Mr. W. Irwine.

A. V. Nursing Rao, Esq., Vizagapatam, proposed by Mr. Blochmann, seconded by Dr. Stoliczka.

C. J. Lyall, Esq., Balandshahar, proposed by Mr. Blochmann, seconded by Dr. Stoliczka.

Robert Gordon, Esq., C. E., Henzadag, Burma, proposed by Dr. J. Anderson, seconded by Mr. H. Blochmann.

S. Pell, Esq., proposed by Dr. Stoliczka, seconded by G. Nevill, Esq.

A. M. Markham, Esq., C. S., proposed by Capt. A. D. Vanrenen, seconded by Col. Gastrell.

J. Coates, Esq., M. D., proposed by H. B. Medlicott, Esq., seconded by Dr. T. Oldham.

The following gentlemen have intimated their desire to withdraw from the Society : Capt. W. J. W. Muir, A. E. Russell, Esq., C. S.

The President communicated the following letters, addressed from the Secretary to the Government of the Punjab to the Superintendent of the Geological Survey of India.

Copy of a letter from Offy. Deputy Commissioner, Bunnoo, to Offy. Commissioner and Superintendent, Derajat Division, No. 135, dated 28th March, 1868.

In reply to his No. 75, dated 8th instant, forwarding for report, copy of No. 1239, dated 3rd instant, from Secretary to Financial Commissioner, Punjab, has the honor to report as follows :

2. The earthquake which occurred here during the night of November 10th last caused the moisture, which generally lies at a depth of about 2 feet beneath the surface, to rise to about 6 inches from the surface. This phenomenon was general throughout all the light sandy tracts of Murwut. In consequence of it numbers of villagers who, on account of the drought, had for the time deserted their villages, returned, and, with those who had remained, at once commenced ploughing and sowing for Rubbee.

3. Undersigned was in Murwut himself shortly after, and himself tested the truth of the reports which had spread throughout the district. The sandy surface of the soil exhibited its usual dry parched appearance, but on scraping the surface a little, the moisture was at once rendered apparent. The rise in the level of the moisture can only be attributed to the earthquake, as the day before it took place the moisture lay at its usual depth below the surface, and on the morning after the earthquake it had everywhere risen from 1 foot to 18 inches above its usual level.

Note by R. E. Egerton, Esquire, Financial Commissioner, Panjab.

The report regarding the effects of the earthquake in Bunnoo on moistening the soil, which appeared in the newspaper lately quoted from *Bombay Gazette*, I think, seemed to me a repetition of the reports which were prevalent there in November to the same effect, and which came up again from *Bombay* after 3 months, as if the news was fresh.

When I was in Bunnoo in November, there was a rumour that the soil of Murwut had been rendered moist by the earthquake which had recently occurred, and that the people had been able to sow their spring crops though no rain had fallen. I asked about this from the people at Lukkee in Murwut, and they said that no such effect had been really produced by an earthquake, but that people

had sown their spring crops, though there had been no rain, because the time for sowing was nearly past, and they were afraid of losing their crop if they did not sow. On hearing this, which seemed to me a rational explanation, I did not make any further enquiry. Mr. Thorburn mentioned that the report had been prevalent, but did not say how it arose. There was an earthquake certainly, and the spring crops in Murwut were largely sown though no rain fell. It was not difficult to invent the fact of unusual moisture having been developed by the earthquake.

Had there been any very general or perceptible moisture of the ground really developed by the earthquake, I am sure, I should have heard of it in my journey through the Bunnoo district.

It is just possible that there may have been another earthquake attended by such a phenomenon recently, but as I have heard quite lately from Colonel Graham, Mr. Thorburn, and Mr. Priestly, who none of them mention it, and as the report on the weather and the crops up to 21st February have not noticed it, I think that the earthquake of November must be that alluded to.

The following communications were read—

I. *A contribution to our knowledge of Pelagic Mollusca; by Capt. G. E. FRYER, Madras Staff Corps,—communicated by Dr. STOLICZKA (Abstract).*

The paper contains a summary of the collections made during two voyages from England to India via the Cape of Good Hope. Capt. Fryer first gives a general account of the organisation of *Pteropods*, then comments on their habits and life, and on the geographical distribution. A table showing the distribution is added, and also a map on which the localities are marked, with the number of species captured at each of them. In the present communication Capt. Fryer treats only of the *Thecosomata* which are furnished with an external though very thin shell. The author found 23 species in the Atlantic Ocean, 23 in the Indian, 11 in the Southern, and 11 in the Bay of Bengal. A few species appear to be peculiar to each of these oceans. The map shows that comparatively the largest number of specimens was obtained south and south-east of Ceylon. The species *Hyalea tridentata* (var. *Forskali*), *H. tenuibranchia* and

H. affinis, which by some authors were considered to be identical, are believed by the author to be distinct, and figures of the shells and animals are given. In conclusion Capt. Fryer appends directions for collecting these interesting animals during sea voyages.

Mr. Baxter bore testimony to the very great accuracy and care evinced by Capt. Fryer, in his paper, particularly as to the times of the appearance and disappearance of this very interesting class of Molluscs. He took the opportunity of dissenting from the placing *H. tentibranchia* as a distinct species, believing it would prove to be a variety of *H. tridentata*; the absence of specimens was a great bar to a correct conclusion. *H. mucronata*, although described by Quoy and Gaimard, was entirely ignored by Rang and Souleyet.

The thanks of the Society were voted to Capt. Fryer for his interesting contribution.

II.—*Notes on the topographical features of Assam, and their indications*; by J. MEREDITH, M. D. (Abstract).

Dr. Meredith proposes to explain the formation of the valley of Assam by the well-known theoretic geological hypothesis of the contraction of the earth's surface, this being, Dr. M. says, the chief cause of depressions and elevations. Dr. M. thinks that there are indications of glacial action at Bishnath-Dolpore and at Tezapore, similar to those which Prof. Agassiz has recorded as occurring in Brazil. Dr. M. gives then an elementary explanation of certain ravines and swampy places, called *Hoolahs* and *Pectanies* by the natives of Assam. He also says that a good deal of the unevenness and disturbances of the ground are due to seismic action.

During the reading of the paper, Dr. Stoliczka observed, regarding Prof. Agassiz' explanation of the formation of the Amazon valley by glacial action, that a short time ago he had received information from Mr. W. Gabb to the effect, that marine shells had been found in those clayey beds which were supposed by Prof. Agassiz to be the result of glacial action. This occurrence of marine fossils clearly shews, that at least some portion of these deposits is of marine origin.

Mr. H. B. Medlicott stated that the rocks at Tezapore which Dr. Meredith most likely supposes to be moraines, are rocks *in situ*, and that he (Mr. Medlicott) has not observed on them any glacial action about Tezapore, nor in any other parts of Assam.

III.—*The District of Lúdhiyánah*, by T. W. H. TOLBORT, Esq., C. S.,—
 communicated by MR. BLOCHMANN, (*Abstract*).

This paper on the District of Lúdhiyánah is divided into two parts—1, on the Natural features; and 2, on the History of the District. The former part is chiefly botanical. The latter touches on the history of Máchiwárah, Tihárah, and the town of Lúdhiyánah which before and during the times of the Moghuls, belonged to the *Sirkár of Sarhind*, or *Sahrind*. The sketch of the history of the district is continued to the present age.

Mr. Tolbort's paper is full of original information regarding the superstitions and the *guru* worship of the people; their reverence for the famous Shaikh 'Abdul Qádir of Gilán (a Persian province near the Caspian Sea), and for Sakki Sarwar. The numerous biographies of Indian saints which we possess, say nothing of the latter; for the history of the former, the Asiatic Society of Bengal possesses several biographies in MS.

The author also gives a list of words and phrases illustrative of the Lúdhiyánah dialect, and closes with a description of the ruins of Sarhind and Páyil.

(The paper is in type, and will form the concluding portion of No. 2 of the Philological Part of the Journal, which will be issued next week.)

Mr. Tolbort has also presented to the Society three Bactrian copper coins; twenty-two copper coins, chiefly of the reign of 'Aláuddín i Khilji; a *Chahárgoshah Jalálah*, or square rupee of Akbar, struck in 990; and a most excellent silver coin of 'Aláuddín i Khilji, struck in A. H. 710, or A. D. 1310. The latter has been described by Marsden (p. 530); but his reading seems somewhat doubtful. The part of the margin of Mr. Tolbort's specimen containing the name of the mint is almost entirely cut away; but it shews traces of the word حضرت
hazzat, and was therefore struck at Dihlī. For Marsden's هذه المنفعة
hazihil-qazziyyatu, I read هذه المفعة
hazihil fazzatu, or هذه المفعة
hazihil-fazriyyatu, which means this silver coin. The word qazziyyah has no sense. My reading is confirmed by the fact that only silver coins of 'Aláuddin contain this phrase. Marsden's plates shew that 'Aláuddin's gold coins bear, with the exception of these two words, the same inscription as the silver coins.

Other silver coins of 'Aláuddín are, according to Marsden "from a mint of an unascertained city, the name of which seems to commence with the character سر, following the term بلدة." This may be سرہند Baldah i Sarhind.

IV.—*Note on the fall of a Meteorite at Jullunder, in April A. D. 1621, according to the Iqbálnámah i Jahángír;* by H. BLOCHMANN, Esq.

"At this time (*Rabi'uládkhir* 1030, or March—April 1621) a dreadful explosion was heard in a village near Jullunder (Jalandhar). The explosion proceeded from the east, and was so tremendous, that the inhabitants of the place were in the greatest anxiety for their lives. While the noise was going on, a lightning-like lustre shot along the heaven, and descended to the earth, when it disappeared. It took some time before the inhabitants recovered from their fright, and regained their composure. They sent a courier to Muhammad Sa'id, the Collector of Jullunder, and informed him of the event. The Collector at once mounted a horse, and came to the spot. He found that the ground to about ten to twelve yards square looked as if burned, and the soil was still quite hot. Muhammad Sa'id then ordered to dig up the burnt ground. The deeper they dug, the hotter and crisper the earth became, till they alighted on a hot lump of iron, which was so hot, that it seemed to have come that very moment out of the oven. When it got cooler, the Collector took it home, put it into a bag, sealed it up, and sent it to Court. His Majesty [Jahángír] called *Ustád Dáúd*, who was well known in those days for the excellent sword-blades which he made, and gave him the order to make the lump into a sword, a dagger and a knife. The armourer then reported that the iron would not stand under the hammer, but crumbled to pieces; but he could mix it with pure and faultless iron. This His Majesty ordered him to do. He then took three parts of meteoric iron (*dhan i barg*, lightning-iron) to one part of common iron, mixed them together, and made of it two swords, one dagger, and one knife, which he laid before His Majesty. After being mixed with the other iron, the meteoric iron exhibited the same grain as is observed in *Yamani* and Southern [Indian] swords. You could bend the swords, and not a trace of the bending would remain. When the

cutting power of these swords was compared with that of other swords, they stood at the very head of all swords."

The *Tuzuk i Jahángír* (p. 329)—from which this account, as everything else, was copied by the author of the *Iqbálnámah*—states that the burned ground measured 10 to 12 *gaz*, not *cubits*, and that the weight of the meteorite was 160 *tolahs*. The two swords received the name of *Shamsher i qáfi* (cutting sword), and *Shamsher i barg-sírikt*, (lightning-natured sword.)

Regarding the time of the fall, the *Tuzuk i Jahángír* says that it took place on the 30th *Farwardín* (Akbar's Era) in the morning. The *Iqbálnámah* and the *Tuzuk* state that the 1st *Farwardín* corresponded to *Mámay* the 27th *Rabi' ulákhír* 1030, A. H.

Now the first Muharram (New Year's Day) 1030 fell, according to Prinsep's Tables, on Thursday the 16th November, 1620; and as the 27th *Rabi' ulákhír* is the 116th day of the year, it would correspond to *Sunday* the 11th March, 1621. But the *Tuzuk* clearly states that the 27th *Rabi' ulákhír* was a *Monday*—which difference arises from the fact that Muhammadans reckon the day from sunset to sunset, but not, as we do, from midnight to midnight.

Hence the 1st *Farwardín* (day-time) corresponds to Monday the 12th March, 1621; and the 30th *Farwardín*, the day, when the meteorite fell, would be Friday, 10th April, 1621, *old style*.

The weight of the meteorite is mentioned to have been 160 *tolahs*. Akbar's *tolah* = 12 *Máshahs* [1 *Máshah* = 15.5 grains troy (Useful Tables, p. 111)], = 186 grains. Our *tolah* weighs 180 grains. Hence the meteorite would have weighed nearly 5.271 lbs. troy.

The President said that in the Catalogue of Meteorites and Fireballs, by R. P. Greg, Esq., given in the reports of the British Association for the Advancement of Science for 1860 (Oxford meeting) this fall is noticed under "1620, April 17, Jalindher, Lahore, 7 lbs. (?) weight: stated to be an Iron fall; 1621? fell with great light and noise." Notwithstanding the discrepancy in date this is obviously the same fall. It is particularly interesting as one of the very few falls of Iron which have been actually observed, and perhaps the only authentic fall of a meteoric iron in India. From the fact stated that the mass when worked by the blacksmith 'crumbled to pieces under the hammer,' it is probable that there was some admixture of stony matter with the iron.

The President also said he had received from Colonel Haughton, Commissioner of Cooch Behar, a notice of a brilliant meteor, which it was desirable to record.

Colonel Haughton says, (under date May 1st.) "We had a magnificent meteor last night (April 30th.) It must, when vertical, I think, have crossed between the tail of the Bear, and a bright star nearest to it. Its apparent size was about half moon's semi-diameter; course, at a guess, from the W. N. W. to E. S. E., colour less brilliant, and more greenish than the moon. Time about 7 p. m.

The most notable fact about it was, that during the last portion of its course, there was a ragged edge of flame—like the corona during the eclipse, I should think—from the side opposite to its course."

V.—*Analysis of the Khetree Meteorite, with an account of its fall;*
by D. WALDIE, Esq., (Abstract).

The Meteoric stone of which I have made the analysis was sent to me a considerable time ago by Mr. W. Stotesbury, of the Topographical Survey. Other urgent occupations have prevented me from completing it until now. Mr. Stotesbury gives an interesting account of the fall, though he is somewhat uncertain of the date: he says, February 1867, not far from Khetree in Shekawattee, Rajputana, and he himself heard the explosion accompanying the fall, though he did not see the stones come to the earth. The stone, submitted to me, was similar in appearance to many of the samples in the Indian and Geological Survey's Museum, a grey mass studded with small metallic globules, partly of a light bluish grey colour, partly of a darker grey, and with a nearly black crust.

The following is an abstract of the analysis—

Nickel iron containing Cobalt and Chromium,	16.98
Troilite (Sulphide of iron) with a little Schreibersite (Phosphate of iron),	5.44
Earthy matter soluble in acids, chiefly Silicate of Magnesia and Iron,	34.69
Chrome Iron,	5.8
Silicates insoluble in acids, chiefly Silicate of Magnesia,	42.86
<hr/>	
	100.

An attempt was made to separate the light-coloured part from the dark grey, and a portion of the light-coloured thus obtained free from dark,—also a portion of the dark-coloured but mixed with some of the light-coloured. The light-coloured part had the highest specific gravity, and contained most metallic iron. It also contained all, or almost all, the cobalt along with nickel, while the dark part contained only, or almost only, nickel. The insoluble part of the dark-coloured portion contained about two-thirds of the chrome iron, the light-coloured about one-third. In other respects they were nearly alike, both containing about the same proportion of Sulphur and other constituents. Particulars will be given in the Journal.

VI.—*On the Ancient Copper Miners of Singhbhûm;*
by V. BALL, Esq., B. A., Geological Survey of India.

The existence of copper ores and ancient copper mines in the district of Singhbhûm was first prominently brought to notice by Colonel Haughton, who published an account of the mineral resources of Singhbhûm in the Journal of this Society for the year 1854. The result of this communication was, that some Calcutta merchants deputed Dr. Emil Stohr to examine the ground, and a Company was formed in 1857 to work the ore. It is no part of the design of the present paper to discuss, or further allude to, the brief and unfortunate history of this Company, or of that which, raised on its ruins, met with a similar fate.

During the past season I have been engaged in an examination of the portion of country in which the copper-ores occur. Commencing to examine the copper-bearing rocks at the foot of the Chota-Nagpore plateau and proceeding thence eastwards, I found that at nearly every point where traces of ore occurred there are ancient excavations. These increasing in size, and being found in every conceivable situation, at the tops of hills, in valleys, in the thickest jungles, and even in the middle of cultivation where the rocks are obscured by superficial deposits. My curiosity was aroused as to who the ancient miners could have been, who have left such imperishable evidence of their skill.

Before proceeding to detail the enquiries which I set on foot, and the conclusions arrived at, it will be necessary to allude to what, so fa-

as I have been able to ascertain, are the only published opinions on the subject.

Colonel Haughton states "There was no local tradition as to when, or by whom the diggings had been worked, and it was a matter of doubt whether they were really made for copper."

Dr. Stöhr, since his return to Europe, has published two papers, one in Zürich* and the other in the *Jahrbuch* for 1854. In the former he suggests a connection between these relics of ancient civilization, and the rock temples of Orissa and the ruins of the town of Dulmi; he also repeats the only tradition known to the natives. This, as it was also told to me, I shall again refer to. In the latter paper, he conjectures that the mines are of the 11th century, when the kingdom of Orissa flourished.

In Singhbhúm proper, the replies to my queries were of a negative kind. No one could make the least suggestion as to who the miners were; and with regard to the age of the mines, the answers were, that they had not been worked during the past three, four or five generations.

From the local Rájahs, called respectively the *Koer* of Seraikela and the *Thakur* of Khursawa, though they seemed willing to communicate all that they knew, I received similar replies.

In Dhalbhúm the *Purdhán* of Landú having been asked his opinion as to the ancient workers, replied that he did not know, but added "The Seraks formerly possessed the country." This belief of the Seraks having once occupied the country is recorded by both Major Tickell and Col. Dalton, as I shall have to allude to again further on.

Having thus had the name of the Seraks suggested, I was enabled to give a definite form to my queries. The result being that not only were several tanks pointed out as the work of Seraks, but, as I proceeded further eastwards, the mines were all attributed to the same ancient people.

East of the Kapergaddee ghát, on the Midnapore and Chaibassa road, there is the site of an old town called Ruam. From the *ghátwal* of Ichinda, and independently from the zemindar of Pairaguri, I heard the only tradition known in connection with this place. It is, that a Rájah named Ruam who lived there possessed two tongues

* *Vierteljahrsschrift der Naturforschenden Gesellschaft in Zürich*, Vol. V, p. 329.

